Materials Services
Materials Poland

Carbon steel

Materials and services

thyssenkrupp

Carbon steel
Materials and services

About the company

thyssenkrupp Materials Poland, as one of the leading distributors of metals and plastics in Poland since 1994, offers a wide range of products from carbon steel, stainless steel, aluminium and plastics. Our offer is extended to special application products, building systems and welding materials. A wide range of our materials and services is available directly from warehouses throughout the country. On a customer's request, we supply materials in special formats or with additional surface treatments.

Our effective quality management is proven by quality certificates awarded by DNV GL Business Assurance Zertifizierung und Umweltgutachter GmbH – a recognised global certification body.

Why cooperate with thyssenkrupp Materials Poland?

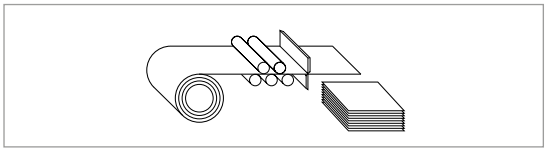
- Wide assortment that is made of carbon steel, stainless steel, aluminum, welding materials and plastics
- Short delivery times directly from stock
- Over 120,000 tons of products in stock
- Cooperation with recognised manufacturers
- Services aligned with customer requirements
- Locations close to the customer

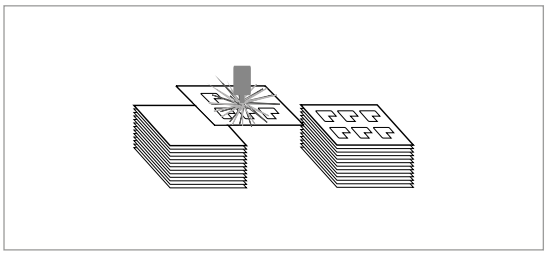
Check out our current offer at:
www.thyssenkrupp-materials.pl

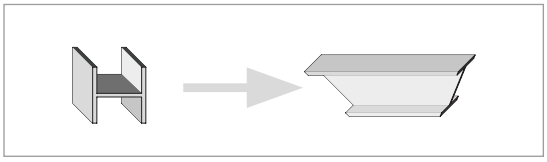
Become our partner.

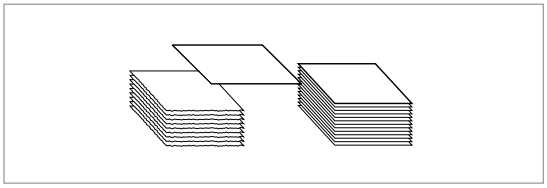
Warehouse and service centers in Dąbrowa Górnicza

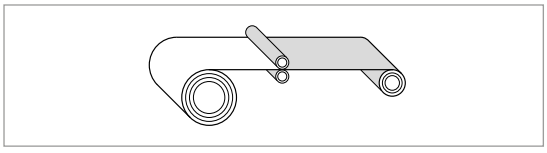
Services – carbon steel

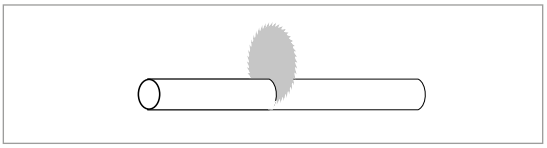


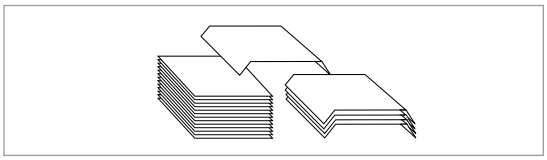












Cut-to-length (CTL)

- thickness range: 1.5 mm – 8 mm
- width range: 500 mm – 2,100 mm
- length range: 600 mm – 12,000 mm
- length tolerance: 3 mm

Laser cutting

- thickness range: up to 25 mm
- max. sheet dimensions: 6,000 mm x 2,000 mm
- cutting tolerance: EN ISO 9013
- Trumpf lasers, output: 6kW, 4kW, 3kW

Oxy-cutting

- thickness range: up to 300 mm
- four- and two-burner machines

Plasma cutting

- Hypertherm 260XD
- thickness range up to 64 mm

Cutting I-beams at an angle

- I-beams can be cut at an angle
- the range of angles depends on the form (see page 29)

Grating and edge rounding

- thickness range: 1 mm – 120 mm
- max. item width: 1,350 mm

Shot blasting and anticorrosive protection

- max. profile dimensions: 1,000 mm x 300 mm
- max. sheet width: 2,000 mm
- min. length of shot-blasted details: 3,000 mm
- 20 µm of water-soluble primer protection
- blast cleaning standard: SA 2.5

Saw cutting

- long items: 1,000 mm x 300 mm
- welded tubes: ∅ 320 mm, seamless tubes: ∅ 406 mm
- 45° cutting as an option

CNC bending

- max. length 4,200 mm
- up to 20 mm sheet cutting
- CNC control

Other services

- item straightening after bending
- drilling
- coil slitting
- threading
- beveling
- CNC grinding

Carbon steel. Sheets and plates

Services

- Cut-to-length (CTL)
- Laser cutting
- Oxy-cutting
- Plasma cutting
- Grinding
- Grating
- Shot blasting
- Anticorrosive protection
- Bending
- Item straightening
- Drilling
- Coil slitting
- Beveling
- Ultrasonic testing

Structural sheets

Grade	Standard	Thickness mm	Format mm
S235JR (+AR, +N) S355J2+N	EN 10025-2	1,5-250	1000 x 2000 1250 x 2500 1500 x 3000/ 6000 2000 x 6000/ 12000 2500 x 12000 3000 x 12000 in addition, strict dimensional conformity On prior agreement, widths over 3,000 mm and lengths over 12,000 mm

Floor plates

Grade	Format mm
S235JR S355J2+N	Width: 1,000-2,500 mm Up to 8 mm cut from coils, also to strict dimensions

Hot-rolled pickled and oiled sheets

Grade	Standard	Thickness mm	Format mm
DD11 DD12 DD13 S235JR S355MC	EN 10111, EN 10025-2 / EN10149-2	2,0–12	Width: 1,000-1,500 mm Up to 8 mm cut from coils, also to strict dimensions

Hot-rolled pickled and oiled sheets surface is clean and scale-free. It is suitable for laser cutting and welding. Example applications: machines (e.g. agricultural), construction industry, bent profiles, automotive industry, white goods (refrigerator and freezer compressor housing).

Sheets with copper addition

Grade	Standard	Thickness mm
S235JRCu S235JRCuC S355J2Cu+N S355J2CuC+N	EN 10025-2	3,0–20

Carbon steel. Sheets and plates

Boiler plates for pressure vessels

Grade	Standard	Thickness mm
P265GH	EN 10028-2	3,0–150
P295GH		
P355GH		
16Mo3		
13CrMo4-5		
10CrMo9-10		
P355 NH/NL/NL2		
P460 NH/NL/NL2		

Weather-resistant

Grade	Standard	Thickness mm
COR-TEN(R) A/B	EN 10025-5	1,5–60
S355J0WP/ S355J2W+N		

Corten sheet grades demonstrate improved resistance to weather factors.
Example applications: stacks, bridges, pipe bridges, frontages, containers, vessels, external wall cladding.

Thermo-mechanically rolled steel for cold forming

Grade	Standard	Thickness mm
QStE 380 TM - WStE 690 TM	SEW 092	2,0–20
S355MC – S700MC	EN 10149-2	
perform 380 – 700*	TKSE Werkstoffblatt 660	

* Manufacturer's own designation

Example applications: housings, high dimensional precision components, containers, trailer sideboards.

High-strength, quenched and tempered structural steel

Grade	Standard	Thickness mm
S690 Q / QL / QL1, N-A-XTRA 700*	EN 10137	3,0–200
S690 QL, XABO 960*		4,0–100
S1100 QL / XABO 1100		4,0–20

* Manufacturer's own designation

Example applications: machine, crane construction, framed steel structures, vehicles and transport equipment, mining.

Services

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Carbon steel. Sheets and plates

Services

- Cut-to-length (CTL)
- Laser cutting
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Wear resistant plates

Grade	Thickness mm
HB 400 – 500	4,0–60

Wear-resistant plates are used whenever steel members are particularly exposed to wear under high loads.

Shipbuilding plates

Grade	Thickness mm
A, AH32, AH36	5,0–70
B	
D, DH32, DH36	
E, EH32, EH36	

Shipbuilding steel plates approved by the following classification societies:
DNV Group AS (DNV)
Bureau Veritas (BV)
American Bureau of Shipping (ABS)
Lloyds Register of Shipping (LRS)

High-strength welded steel

Grade	Standard	Thickness mm	Format mm
S355N	EN 10025-3	6–80	1500 x 6000; 2000 x 6000 / 12000, 2500 x 12000, 3000 x 12000. in addition, strict dimensional conformity On prior agreement, widths over 3,000 mm and lengths over 12,000 mm
S420N			
S460N			

Designed for large industrial structures, such as bridges, tanks, pipelines, projects where welding is the primary fabrication process.

Boron steel

Grade	Thickness mm
TBL Werkstoff 1.5529	3–100
TBL PLUS Werkstoffblatt 2060	3–12
30MnB5 Werkstoff 1.5531	2–13

Designed for fabrication of toughened machine parts subject to high mechanical loads in operation, such as shafts, gears, pins.

Carbon steel. Sheets and plates

Cold-rolled sheets, oiled and non-oiled

Grade	Standard	Thickness mm
DC01	EN 10130	0,4–4,0
DC03		
DC04		
DC05		
DC06		

Example applications: automotive industry, heating and plumbing technology, construction industry, lighting fittings, packaging, household appliances, tanks, profiles, furniture production.

Steel sheets for enamel coating

Grade	Standard	Thickness mm
DC01EK	EN 10209	0,4–3,0
DC04EK		
DC06EK		

Hot-dip galvanized sheets**

Grade	Standard	Thickness mm
DX51D+Z do DX54D+Z	EN 10346	0,4–4,0

** Standard zinc coating thickness is 275 g/m², surface grade A

Electrogalvanized sheets**

Grade	Standard	Thickness mm
DC01+ZE do DC04+ZE	EN 10152	0,50–3,0

** Standard zinc coat thickness is ZE 25/25

We also supply other types of coated surfaces.

Symbol	Coated
+ ZF	hot (galvanized) zinc-iron alloy
+ AZ	aluminum-zinc alloy - Aluzinc
+ AS	aluminum-silicon coating - Alusi

Additional options

On request we also supply the following sheets:
- bending-tested (e.g. S235JRC, S355J2C+N),
- for laser cutting,
- ultrasonic-tested,
- Z-tested (lamellar tearing),
- surface-treated (cleaning scale, galvanizing, shot blasting and painting),
- heat treated (stress relief, normalizing treatment),
- surface-prepared for welding.

Inspection by classification entities as per your instructions made with the order.

Services

- Cut-to-length (CTL)
- Laser cutting
- Oxy-cutting
- Plasma cutting
- Grinding
- Grating
- Shot blasting
- Anticorrosive protection
- Bending
- Item straightening
- Drilling
- Coil slitting
- Beveling
- Ultrasonic testing

Carbon steel. Tubes

Dimensions and theoretical weight per unit of length as per EN 10220

Outer diameter D mm Range 1	2	3	T wall thickness, mm 0,5	0,6	0,8	1	1,2	1,4	1,6	1,8	2	2,3	2,6	2,9	3,2	3,6	4	4,5	5	5,4	5,6	6,3
			Theoretical weight kg/m																			
10,2			0,120	0,142	0,185	0,227	0,266	0,304	0,339	0,373	0,404	0,448	0,487									
	12		0,142	0,169	0,221	0,271	0,320	0,366	0,410	0,453	0,493	0,550	0,603	0,651	0,694							
	12,7		0,150	0,179	0,235	0,289	0,340	0,390	0,438	0,484	0,528	0,590	0,648	0,701	0,750							
13,5			0,160	0,191	0,251	0,308	0,364	0,418	0,470	0,519	0,567	0,636	0,699	0,758	0,813	0,879						
		14	0,166	0,198	0,260	0,321	0,379	0,435	0,489	0,542	0,592	0,664	0,731	0,794	0,852	0,923						
	16		0,191	0,228	0,300	0,370	0,438	0,504	0,568	0,630	0,691	0,777	0,859	0,973	1,01	1,10	1,18					
17,2			0,206	0,246	0,324	0,400	0,474	0,546	0,616	0,684	0,750	0,845	0,936	1,02	1,10	1,21	1,3	1,41				
		18	0,216	0,257	0,339	0,419	0,479	0,573	0,647	0,719	0,789	0,891	0,987	1,08	1,17	1,28	1,38	1,50				
	19		0,229	0,272	0,359	0,444	0,527	0,608	0,687	0,764	0,838	0,947	1,05	1,15	1,25	1,37	1,48	1,61	1,73			
	20		0,240	0,287	0,379	0,469	0,556	0,642	0,726	0,808	0,888	1,00	1,12	1,22	1,33	1,46	1,58	1,72	1,85			
21,3			0,256	0,306	0,404	0,501	0,595	0,687	0,777	0,866	0,952	1,08	1,20	1,32	1,43	1,57	1,71	1,86	2,01	2,12		
		22	0,265	0,317	0,418	0,518	0,616	0,711	0,805	0,897	0,996	1,12	1,24	1,37	1,48	1,63	1,78	1,94	2,10	2,21		
	25		0,302	0,361	0,477	0,592	0,704	0,815	0,923	1,03	1,13	1,29	1,44	1,58	1,72	1,90	2,07	2,28	2,47	2,61	2,68	2,91
		25,4	0,307	0,367	0,458	0,602	0,716	0,829	0,939	1,05	1,15	1,31	1,46	1,61	1,75	1,94	2,11	2,32	2,52	2,66	2,73	2,97
26,9			0,326	0,389	0,515	0,639	0,761	0,880	0,998	1,11	1,23	1,40	1,56	1,72	1,87	2,07	2,26	2,49	2,70	2,86	2,94	3,20
		30	0,364	0,435	0,576	0,715	0,852	0,987	1,12	1,25	1,38	1,57	1,76	1,94	2,11	2,34	2,56	2,83	3,08	3,28	3,27	3,68
	31,8		0,386	0,462	0,612	0,760	0,906	1,05	1,19	1,33	1,47	1,67	1,87	2,07	2,26	2,50	2,74	3,03	3,30	3,52	3,62	3,96
	32		0,388	0,465	0,616	0,765	0,911	1,06	1,20	1,34	1,48	1,68	1,89	2,08	2,27	2,52	2,76	3,05	3,33	3,54	3,65	3,99
33,7			0,409	0,490	0,649	0,805	0,962	1,12	1,27	1,42	1,56	1,78	1,99	2,20	2,41	2,67	2,93	3,24	3,54	3,77	3,88	4,26
		35	0,425	0,509	0,675	0,838	1,00	1,16	1,32	1,47	1,63	1,85	2,08	2,30	2,51	2,79	3,06	3,38	3,70	3,94	4,06	4,46
	38		0,462	0,553	0,734	0,912	1,09	1,26	1,44	1,61	1,78	2,02	2,27	2,51	2,75	3,05	3,35	3,72	4,07	4,34	4,47	4,93
	40		0,487	0,583	0,773	0,962	1,15	1,33	1,52	1,70	1,87	2,14	2,40	2,65	2,90	3,23	3,55	3,94	4,32	4,61	4,75	5,24
42,4			0,517	0,619	0,821	1,02	1,22	1,42	1,61	1,80	1,99	2,27	2,55	2,82	3,09	3,44	3,79	4,21	4,61	4,93	5,08	5,61
		44,5	0,543	0,650	0,862	1,07	1,28	1,49	1,69	1,90	2,10	2,39	2,69	2,98	3,26	3,63	4,00	4,44	4,87	5,21	5,37	5,94
48,3				0,706	0,937	1,17	1,39	1,62	1,84	2,06	2,28	2,61	2,93	3,25	3,56	3,97	4,37	4,86	5,34	5,71	5,90	6,53
	51			0,746	0,990	1,23	1,47	1,71	1,95	2,18	2,42	2,76	3,10	3,44	3,77	4,21	4,64	5,16	5,67	6,07	6,27	6,94
		54		0,790	1,05	1,31	1,56	1,82	2,07	2,32	2,56	2,93	3,30	3,65	4,01	4,47	4,93	5,49	6,04	5,47	6,68	7,41
	57			0,835	1,11	1,38	1,65	1,92	2,19	2,45	2,71	3,10	3,49	3,87	4,25	4,74	5,23	5,83	6,41	6,87	7,10	7,88
60,3				0,883	1,17	1,48	1,75	2,03	2,32	2,60	2,88	3,29	3,70	4,11	4,51	5,03	5,55	6,19	6,82	7,31	7,55	8,39
	63,5			0,931	1,24	1,54	1,84	2,14	2,44	2,74	3,03	3,47	3,90	4,33	4,76	5,32	5,87	6,55	7,21	7,74	8,00	8,89
	70,0				1,37	1,70	2,04	2,37	2,70	3,03	3,35	3,84	4,32	4,80	5,27	5,90	6,51	7,27	8,01	8,60	8,89	9,90
		73			1,42	1,78	2,12	2,47	2,82	3,16	3,50	4,01	4,51	5,01	5,51	6,16	6,71	7,60	8,38	9,00	9,31	10,4
76,1					1,49	1,85	2,22	2,58	2,94	3,30	3,65	4,19	4,71	5,24	5,75	6,44	7,11	7,95	8,77	9,42	9,74	10,8
	82,5				1,61	2,01	2,41	2,80	3,19	3,58	3,97	4,55	5,12	5,69	6,26	7,00	7,74	8,66	9,56	10,3	10,8	11,8
88,9					1,74	2,17	2,60	3,02	3,44	3,87	4,29	4,91	5,53	6,15	6,76	7,57	8,38	9,37	10,3	11,1	11,5	12,8
	101,6						2,97	3,46	3,95	4,43	4,91	5,63	6,35	7,06	7,77	8,70	9,63	10,8	11,9	12,8	13,3	14,8
		108					3,16	3,68	4,20	4,71	5,23	6,00	6,76	7,52	8,27	9,27	10,3	11,5	12,7	13,7	14,1	15,8
114,3							3,35	3,90	4,45	4,99	5,54	6,35	7,16	7,97	8,77	9,83	10,9	12,2	13,5	14,5	15,0	16,8
	127								4,95	5,56	6,17	7,07	7,98	8,88	9,77	11,0	12,1	13,6	15,0	16,2	16,8	18,8
	133								5,18	5,82	6,46	7,41	8,36	9,30	10,2	11,5	12,7	14,3	15,8	17,0	17,6	19,7
139,7									5,45	6,12	6,79	7,79	8,79	9,78	10,8	12,1	13,4	15,0	16,6	17,9	18,5	20,7
		141,3							5,51	6,19	6,87	7,88	8,89	9,90	10,9	12,2	13,5	15,2	16,8	18,1	18,7	21,0
		152,4							5,95	6,69	7,42	8,51	9,61	10,7	11,8	13,2	14,6	16,4	18,2	19,6	20,3	22,7
		159							6,21	6,98	7,74	8,89	10,0	11,2	12,3	13,8	15,3	17,1	19,0	20,5	21,2	23,7
168,3									6,58	7,39	8,20	9,42	10,6	11,8	13,0	14,6	16,2	18,2	20,1	21,7	22,5	25,2
		177,8								7,81	8,67	9,95	11,2	12,5	13,8	15,5	17,1	19,2	21,3	23,0	23,8	26,6
		193,7								8,52	9,46	10,9	12,3	13,6	15,0	16,9	18,7	21,0	23,3	25,1	26,0	29,1
219,1										9,65	10,7	12,3	13,9	15,5	17,0	19,1	21,2	23,8	26,4	28,5	29,5	33,1
		244,5									12,0	13,7	15,5	17,3	19,0	21,4	23,7	26,6	29,5	31,8	33,0	37,0
273											13,4	15,4	17,3	19,3	21,3	23,9	26,5	29,8	33,0	35,6	36,9	41,4
323,9													20,6	23,0	25,3	28,4	31,6	35,4	39,3	42,4	44,0	49,3
355,6													22,6	25,2	27,8	31,3	34,7	39,0	43,2	46,6	48,3	54,3
406,4													25,9	28,9	31,8	35,8	39,7	44,6	49,5	53,4	55,4	62,2
457															35,8	40,3	44,7	50,2	56,7	60,1	62,3	70,0
508															39,5	44,8	49,7	55,9	62,0	66,9	69,4	77,9
		559													43,9	49,3	54,7	61,5	68,3	73,7	76,4	85,9
610															47,9	53,8	59,8	67,2	74,6	80,5	83,5	93,8
		660															64,7	72,7	80,8	87,2	90,4	102
711																	69,7	78,4	87,1	94,0	97,4	109
	762																74,8	84,1	93,3	101	104	117
813																	79,8	89,7	99,6	108	112	125
		864															84,8	95,4	106	114	119	133
914																	89,8	101	112	121	125	141
1016																	99,8	112	125	135	140	157
1067																			131	141	147	165
1118																			137	148	154	173
	1168																		143	155	161	180
1219																			150	162	168	188
	1321																				182	204
1422																					196	220
	1524																					236
1626																						252
	1727																					
1829																						
	1930																					
2032																						
	2134																					
2235																						
	2337																					
	2438																					
2540																						

T wall thickness, mm																												
7,1	8	8,8	10	11	12,5	14,2	16	17,5	20	22,2	25	28	30	32	36	40	45	50	55	60	65	70	80	90	100			
Theoretical weight kg/m																												
3,47	3,73																											
4,01	4,34																											
4,32	4,70																											
4,36	4,74																											
4,66	5,07	5,40																										
4,89	5,33	5,69																										
5,41	5,92	6,34	6,91																									
5,76	6,31	6,77	7,40																									
6,18	6,79	7,29	7,99																									
6,55	7,20	7,75	8,51	9,09	9,86																							
7,21	7,95	8,57	9,45	10,1	11,0																							
7,69	8,48	9,16	10,1	10,9	11,9																							
8,21	9,08	9,81	10,9	11,7	12,8	13,9																						
8,74	9,57	10,5	11,6	12,5	13,7	15,0																						
9,32	10,3	11,2	12,4	13,4	14,7	16,1	17,5																					
9,88	10,9	11,9	13,2	14,2	15,7	17,3	18,7																					
11,0	12,2	13,3	14,8	16,0	17,7	19,5	21,3	22,7																				
11,5	12,8	13,9	15,5	16,8	18,7	20,6	22,5	24,0																				
12,1	13,4	14,6	16,3	17,7	19,6	21,7	23,7	25,3	27,7																			
13,2	14,7	16,0	17,9	19,4	21,6	23,9	26,2	28,1	30,8	33,0																		
14,3	16,0	17,4	19,5	21,1	23,6	26,2	28,8	30,8	34,0	36,5	39,4																	
16,5	18,5	21,1	22,6	24,6	27,5	30,6	33,8	36,3	40,2	43,5	47,2	50,8																
17,7	19,7	21,5	24,2	26,3	29,4	32,8	36,3	39,1	43,4	47,0	51,2	55,2	57,7															
18,8	21,0	22,9	25,7	28,0	31,4	35,1	38,8	41,8	46,5	50,4	55,1	56,6	62,4	64,9														
21,0	23,5	25,7	28,9	31,5	35,3	39,5	43,8	47,3	52,8	57,4	62,9	68,4	71,8	75,0	80,8													
22,0	24,7	27,0	30,3	33,1	37,1	41,6	46,2	49,8	55,7	60,7	66,6	72,5	76,2	79,7	86,1	91,7												
23,2	26,0	28,4	32,0	34,9	39,2	43,9	48,8	52,7	59,0	64,3	70,7	77,1	81,2	85,0	92,1	98,4												
23,5	26,3	28,8	32,4	35,3	39,7	44,5	49,4	53,4	59,8	65,2	71,7	78,2	82,3	86,3	93,5	99,9												
25,4	28,5	31,2	35,1	38,4	43,1	48,4	53,8	58,2	65,3	71,3	78,9	85,9	90,6	95,0	103	111	119											
26,8	29,8	32,6	36,7	40,1	45,2	50,7	56,4	61,1	68,6	74,9	82,6	90,5	95,4	100	109	117	127											
28,2	31,6	34,6	39,0	42,7	48,0	54,0	60,1	65,1	73,1	80,0	88,3	96,9	102	108	117	127	137	146										
29,9	33,5	36,7	41,4	45,2	51,0	57,3	63,8	69,2	77,8	85,2	94,2	103	109	115	126	136	147	158	167									
32,7	36,6	40,1	45,3	49,6	55,9	62,9	70,1	76,0	85,7	93,9	104	114	121	128	140	152	165	177	188	198								
37,1	41,6	45,6	51,6	56,5	63,7	71,8	80,1	87,0	98,2	108	120	132	140	148	163	177	193	209	223	235	247	257						
41,6	46,7	51,2	57,8	63,3	71,5	80,6	90,2	98,0	111	122	135	149	159	168	185	202	221	240	257	273	288	301	325					
46,6	52,3	57,3	64,9	71,1	80,3	90,6	101	110	125	137	153	189	180	190	210	230	253	275	296	315	333	350	381					
55,5	62,3	68,4	77,4	84,9	96,0	108	121	132	150	165	184	204	217	230	256	280	310	338	365	390	415	438	481	519	552			
61,0	68,6	75,3	85,2	93,5	106	120	134	146	166	183	204	226	241	255	284	311	345	377	408	437	466	493	544	590	630			
69,9	78,6	86,3	97,8	107	121	137	154	168	191	210	235	261	278	295	329	361	401	439	477	513	547	581	644	702	765			
78,8	88,6	97,3	110	121	137	155	174	190	216	238	266	296	316	335	374	411	457	502	545	587	628	668	744	815	880			
87,7	98,6	108	123	135	153	173	194	212	241	266	298	331	354	376	419	482	514	565	614	663	710	756	844	928	1006			
96,6	109	119	135	149	168	191	214	234	266	294	329	367	391	416	464	512	570	628	684	738	792	844	845	1041	1132			
106	119	130	148	162	184	209	234	256	291	322	361	402	429	456	510	562	627	691	753	814	874	932	1046	1154	1258			
114	129	141	160	176	200	226	254	277	316	349	392	436	466	496	554	612	683	752	821	888	954	1019	1144	1265	1381			
123	139	152	173	190	215	244	274	299	341	377	423	472	504	536	599	662	739	815	890	963	1036	1107	1245	1378	1507			
132	149	163	185	204	231	262	294	321	366	405	454	507	542	576	645	712	796	878	959	1039	1117							
141	159	175	198	218	247	280	314	343	391	433	486	542	579	618	690	763	852	941	1028	1114	1199							
150	169	186	211	231	262	298	335	365	416	461	517	577	617	657	735	813	909	1004	1097	1190	1281							
159	179	196	223	245	278	315	254	387	441	488	548	612	654	696	780	862	964	1065	1165	1264	1361							
177	199	219	248	273	309	351	395	431	491	544	611	682	729	777	870	963	1078	1191	1303	1415	1524							
186	209	230	261	286	325	369	415	453	516	572	642	717	767	817	915	1013	1134	1254	1373	1490	1606							
195	219	241	273	300	341	387	435	475	542	600	674	753	805	857	961	1063	1191	1317	1442	1556	1688							
203	229	252	286	314	356	404	455	497	566	627	705	787	842	896	1005	1113	1246	1379	1510	1639	1768							
212	239	263	298	328	372	422	475	519	591	655	736	822	880	937	1050	1163	1303	1441	1579	1715	1850							
230	259	285	323	355	403	458	515	563	642	711	799	893	955	1017	1141	1264	1416	1567	1717	1866	2013							
248	279	307	348	383	435	493	555	606	962	766	861	963	1030	1097	1231	1363	1528	1692	1854	2015	2175							
266	299	329	373	410	466	529	595	650	742	822	924	1033	1105	1177	1321	1464	1641	1818	1993	2166	2339							
283	319	351	399	438	497	564	635	694	792	878	987	1103	3381	1258	1412	1565	1755	1943	2131	2317	2502							
301	339	373	423	466	529	600	675	738	842	933	1049	1173	1256	1338	1501	1664	1867	2068	2268	2467	2664							
319	359	395	449	493	560	636	715	782	892	989	1112	1244	1331	1418	1592	1765	1980	2194	2406	2618	2828							
	379	417	474	521	591	671	755	825	942	1044	1175	1313	1406	1498	1682	1864	2092	2318	2453	2767	2990							
	399	439	499	548	623	707	795	869	992	1100	1237	1384	1481	1578	1772	1965	2205	2444	2682	2918	3153							
		461	524	576	654	742	836	913	1043	1156	1300	1454	1557	1659	1863	2066	2318	2570	2820	3069	3317							
		483	549	604	685	778	876	957	1093	1211	1363	1524	1631	1739	1952	2165	2430	2694	2957	3218	3479							
			574	631	717	813	916	1001	1143	1267	1425	1594	1707	1819	2043	2266	2544	2820	3095	3369	3642							
			599	658	748	849	956	1045	1193	1323	1488	1664	1782	1899	2133	2366	2656	2945	3232	3619	3804							
			624	686	779	885	996	1089	1243	1378	1551	1735	1857	1979	2223	2466	2769	3070	3371	3670	3967							

Carbon steel. Tubes

Chemical contents and mechanical properties

Standard	Grade	C (%)	Mn (%)	P max. (%)	S max. (%)	Si (%)	Cr (%)	Ni (%)
EN 10216-1	P195TR1	0,13	0,7	0,025	0,02	0,35	0,3	0,3
EN 10216-1	P195TR2	0,13	0,7	0,025	0,02	0,35	0,3	0,3
EN 10216-1	P235TR1	0,16	1,2	0,025	0,02	0,35	0,3	0,3
EN 10216-1	P235TR2	0,16	1,2	0,025	0,02	0,35	0,3	0,3
EN 10216-1	P265TR1	0,2	0,2	0,025	0,02	0,4	0,3	0,3
EN 10216-1	P265TR2	0,2	0,2	0,025	0,02	0,4	0,3	0,3
DIN 1629	St37.0	max 0,17		0,040	0,040			
DIN 1629	St44.0	max 0,21		0,040	0,040			
DIN 1629	St52.0	max 0,22	max 1,60	0,040	0,035	max 0,55		
DIN 1630	St37.4	max 0,17	min 0,35	0,040	0,040	max 0,35		
DIN 1630	St44.4	max 0,20	min 0,40	0,040	0,040	max 0,35		
DIN 1630	St52.4	max 0,22	max 1,60	0,040	0,035	max 0,55		
EN 10210	S235JRH	max 0,17	max 1,40	0,045	0,045			
EN 10210	S275JOH	max 0,20	max 1,50	0,040	0,040			
EN 10210	S275J2H	max 0,20	max 1,50	0,035	0,035			
EN 10210	S355JOH	max 0,22	max 1,60	0,040	0,040	max 0,55		
EN 10210	S355J2H	max 0,22	max 1,60	0,035	0,035	max 0,55		
EN 10216-2	P235GH	max 0,16	max 1,20	0,025	0,02	max 0,35	max 0,30	max 0,30
EN 10216-2	P265GH	max 0,20	max 1,40	0,025	0,02	max 0,40	max 0,30	max 0,30
EN 10216-2	16Mo3	0,12–0,20	0,40–0,90	0,025	0,02	max 0,35	max 0,30	max 0,30
EN 10216-2	14MoV63	0,10–0,15	0,40–0,70	0,025	0,02	0,15–0,35	0,30–0,60	max 0,30
EN 10216-2	13CrMo4-5	0,10–0,17	0,40–0,70	0,025	0,02	max 0,35	0,70–1,15	max 0,30
EN 10216-2	10CrMo9-10	0,08–0,14	0,30–0,70	0,025	0,02	max 0,50	2,00–2,50	max 0,30
DIN 17175	St35.8	max 0,17	0,40–0,80	0,040	0,040	0,10–0,35		
DIN 17175	St45.8	max 0,21	0,40–1,20	0,040	0,040	0,10–0,35		
DIN 17175	15Mo3	0,12–0,20	0,40–0,80	0,035	0,035	0,10–0,35		
DIN 17175	13CrMo44	0,10–0,18	0,40–0,70	0,035	0,035	0,10–0,35	0,70–1,10	
DIN 17175	14MoV63	0,10–0,18	0,40–0,70	0,035	0,035	0,10–0,35	0,30–0,60	
DIN 17175	10CrMo910	0,08–0,15	0,40–0,70	0,035	0,035	max 0,50	2,00–2,50	
EN 10208	L245NB (StE240.7)	max 0,16	max 1,10	0,025	0,020	max 0,40	max 0,30	max 0,30
EN 10208	L290NB (StE290.7)	max 0,17	max 1,20	0,025	0,020	max 0,40	max 0,30	max 0,30
EN 10208	L360NB (StE360.7)	max 0,20	max 1,60	0,025	0,020	max 0,45	max 0,30	max 0,30
API Spec 5CT	H-40			0,030	0,030			
API Spec 5CT	J-55			0,030	0,030			
API Spec 5CT	K-55			0,030	0,030			
API Spec 5CT	N-80			0,030	0,030			
API Spec 5L	A	max 0,22	max 0,90	0,030	0,030			
API Spec 5L	B	max 0,27	max 1,15	0,030	0,030			
API Spec 5L	X 42	max 0,29	max 1,25	0,030	0,030			
API Spec 5L	X 45	max 0,31	max 1,35	0,030	0,030			
API Spec 5L	X 52	max 0,31	max 1,35	0,030	0,030			
API Spec 5L	X 56	max 0,26	max 1,35	0,030	0,030			
API Spec 5L	X 60	max 0,26	max 1,35	0,030	0,030			
ASTM A 106	Gr. A	max 0,25	0,27–0,93	0,025	0,025	min 0,10	max 0,40	max 0,40
ASTM A 106	Gr. B	max 0,30	0,29–1,06	0,025	0,025	min 0,10	max 0,40	max 0,40
ASTM A 106	Gr. C	max 0,35	0,29–1,06	0,035	0,035	min 1,00	max 0,40	max 0,40
ASTM A 53	Gr. A	max 0,25	max 0,95	0,050	0,060		max 0,40	max 0,40
ASTM A 53	Gr. B	max 0,30	max 1,20	0,050	0,060		max 0,40	max 0,40

Cu max. (%)	Al (%)	V (%)	Nb (%)	Mo (%)	Working temp.	Min. yield strength Re (Mpa) min			Tensile strength Rm (MPa)	Elongation at failure A_5 min (%)
						< 16	16/40	>40-60		
0,3		0,02	0,01	0,08		195	185	175	320-440	27/25
0,3	0,02	0,02	0,01	0,08		195	185	175	320-440	27/25
0,3		0,02	0,01	0,08		235	225	215	360-500	25/23
0,3	0,02	0,02	0,01	0,08		235	225	215	360-500	25/23
0,3		0,02	0,01	0,08		265	255	245	410-570	21/19
0,3	0,02	0,02	0,01	0,08		265	255	245	410-570	21/19
						<16	16/40	>40–65		
			max 0,009			235	225	215	350–480	25/23
			max 0,009			275	265	255	420–550	21/19
	min 0,020					355	345	335	500–650	21/19
	min 0,020					235	225	215	350–480	25/23
	min 0,020					275	265	255	420–550	21/19
	min 0,020					355	345	335	500–650	21/19
			max 0,009			235	225	215	340–470	26/24
			max 0,009			275	265	255	410–560	22/20
	min 0,020					275	265	255	410–560	22/20
			max 0,009			355	345	335	490–630	22/20
	min 0,020					355	345	335	490–630	22/20
0,30	min 0,02	max 0,02	max 0,01	max 0,08		235	225	215	360-500	25/23
0,30	min 0,02	max 0,02	max 0,01	max 0,08		265	255	245	410-570	23/21
0,30	max 0,04			0,25–0,35		280	270	260	450-600	22/20
0,30	max 0,04			0,50–0,70		320	320	310	460-610	20/18
0,30	max 0,04			0,40–0,60		290	290	280	440-590	22/20
0,30	max 0,04			0,90–1,10		280	280	270	480-630	22/20
					475 °C	235	225	215	360–480	25/23
					475 °C	255	245	235	410–530	21/19
				0,25–0,35	500 °C	270	270	260	450–600	22/20
				0,45–0,65	560 °C	290	290	280	440–590	22/20
				0,50–0,70	600 °C	320	320	310	460–610	20/18
		0,22–0,32		0,90–1,20	600 °C	280	280	270	450–600	20/18
0,25	0,015–0,060			max 0,10			245–440		min 415	22
0,25	0,015–0,060	max 0,05		max 0,10			290–440		min 415	21
0,25	0,015–0,060	max 1,00		max 0,10			360–510		min 460	20
							276–552		min 414	acc. to API
							379–552		min 517	acc. to API
							379–552		min 655	acc. to API
							552–758		min 689	acc. to API
							207		min 331	acc. to API
							241		min 413	acc. to API
							289		min 413	acc. to API
							317		min 434	acc. to API
							358		min 455	acc. to API
							386		min 489	acc. to API
							413		min 517	acc. to API
0,40		max 0,08		max 0,15	475 °C		205		min 330	acc. to standard
0,40		max 0,08		max 0,15	475 °C		240		min 415	acc. to standard
0,40		max 0,08		max 0,15			275		min 485	acc. to standard
0,40		max 0,08		max 0,15			205		min 330	acc. to standard
0,40		max 0,08		max 0,15			240		min 415	acc. to standard

Carbon steel. Hot-rolled seamless tubes

Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Tubes and pipes for pressure applications

Our offer comprises tubes as per the following standards:
EN 10216-1 in grades: P235TR2, P265TR2; other grades on prior agreement.
EN 10216-3 in grades: P355N, P355NHTC1 (for increased temperatures); other grades on prior agreement.
DIN 1629 in grades St37.0, St44.0, St52.0; other grades on prior agreement.

Grade	Werk-stoff	Tensile strength Rm w N/mm² Wall thickness in mm	Min. yield strength R_{eH} in N/mm² for wall thickness in mm			Elongation at failure A_5 w %	
EN			up to 16	from 16 to 40	from 40 to 60	longitu-dinal	cross-wise
P235TR2	1.0255	360–500	235	225	215	25	23

Grade	Werk-stoff	Tensile strength Rm w N/mm² Wall thickness in mm			Min. yield strength R_{eH} in N/mm² for wall thickness in mm						Elongation at failure A_5 w %	
EN		up to 20	from 20 do 65	from 65 to 100	to 20	from 20 to 40	from 40 to 50	from 50 to 65	from 65 to 80	from 80 to 100	longitu-dinal	cross-wise
P355N	1.0562	490–650	490–630	450–590	355	345	335	325	315	305	22	20

Outer diameters and wall thickness ranges

Outer tube diameter mm	Wall thick-ness range mm	Outer tube diameter mm	Wall thick-ness range mm	Outer tube diameter mm	Wall thick-ness range mm	Outer tube diameter mm	Wall thick-ness range mm
21,3	2,0–4,0	54	2,6–12,5	127	4–32	323,9	7,1–40
25	2,0–4,5	57	2,9–12,5	133	4–32	355,6	8–45
26,9	2,0–5,0	60,3	2,9–14,2	139,7	4–32	406,4	8,8–50
30	2,0–6,3	63,5	2,9–14,2	159	4,5–32	457	10–50
31,8	2,0–7,1	70	2,9–20,0	168,3	4,5–32	508	11–60
33,7	2,0–7,1	76,1	2,9–20,0	177,8	5–32	-	-
38	2,6–8,0	82,5	3,2–22,2	193,7	5,6–36	-	-
42,4	2,6–8,0	88,9	3,2–25,0	219,1	6,3–40		
44,5	2,6–12,5	101,6	3,6–25,0	244,5	6,3–40		
48,3	2,6–12,5	108	3,6–30	273	6,3–50		
51	2,6–12,5	114,3	3,6–32	298,5	7,1–40		

We also supply the tubes:
- in non-standard dimensions (e.g. 95; 368; 559; 660; etc.) – on prior agreement,
- with non-standard walls – on prior agreement,
- with straight or beveled ends – on prior agreement,
- insulated – on prior agreement,
- zinc-coated,
- in commercial lengths from 4 to 13 rm, in multiples or fix lengths – on prior agreement.

Carbon steel. Hot-rolled seamless tubes

Tubes for constructions

Our offer comprises tubes as per the following standard:
EN 10210, grades S235JRH, S355J2H, S355J0H.
We also supply S275J0H, S275J2H and S355NH grades if the customer so wishes.
Other grades on prior agreement.

Grade		Werk-stoff	Tensile strength Rm in N/mm² Wall thickness in mm	Min. yield strength R_{eH} in N/mm² for wall thickness in mm					Elongation at failure A_5 w %		Impact strength	
DIN	EN		N/mm²	up to 16	from 16 to 40	from 40 to 65	from 65 to 80	from 80 to 100	from 100 to 120	longi-tudinal	cross-wise	at temp	J
U St 37-2	-	1.0036	340–470	235	-	-	-	-	-	26	24	20	27
R St 37-2	S235JRH	1.0038	340–470	235	225	215	205	195	185	26	24	20	27
St44-3	S275J2H	1.0144	410–580	275	265	255	245	235	225	22	20	-20	27
St52-3N	S355J2H	1.0570	490–680	355	345	335	315	295	285	22	20	-20	27

We also supply hot-dip galvanized tubes.

Boiler tubes (for pressure applications at higher temperatures)

Our offer comprises tubes as per the following standards:
EN 10216-2 in grades P235GH TC1 and TC2, P265GH TC1 and TC2, 16Mo3, 13CrMo4-5, 10CrMo9-10
DIN 17175 in grades St35.8 I° and III°, St45.8 I° and III°, 15Mo3, 13CrMo44, 10CrMo910
Other grades on prior agreement.

Name		Werk-stoff	Tensile strength	Min. yield strength in N/mm² for wall thickness			Elongation at failure A_5 w %	
DIN	EN		N/mm²	up to 16 mm	from 16 to 40 mm	from 40 to 60 mm	longitudinal	cross-wise
St35.8	P235GH	1.0345	360–500	235	225	215	25	23
St45.8	P265GH	1.0425	410–570	255	245	235	21	19
15Mo3	16Mo3	1.5415	450–600	280	270	260	22	20
13CrMo44	13CrMo4-5	1.7335	440–590	290	290	280	22	20
10CrMo910	10CrMo9-10	1.7383	460–630	280	280	270	22	20
14MoV63	14MoV63	1.7715	460–610	320	320	310	20	18

We also supply tubes as per ASTM and other standards per customer request.

Special-purpose seamless tubes

Line pipes for gas and combustible fluids as per 10208-2 and EN ISO 3183.
Drilling and casing pipes as per API spec. 5CT.
Pipes for mechanical applicaton as per EN 10297-1.
Pipes for hydraulic cylinders.
If you are interested in other types of seamless pipes, contact our sales department.

Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Carbon steel. Seamless tubes

Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Primary grade substitutes for seamless pipes

	PN …	DIN …	EN …
„Pressure", „structural" grades, for machine construction, general application	R35	St37.0	P235TR1
			P235TR2
			S235JRH
			S235J0H
			E235 (+AR,+N)
	R45	St44.0	P265TR2
			S275J2H
			S275J0H
	18G2A	St52.0	P355N
			P355NH (TC1, TC2)
			S355J2H
			S355J0H
			E355 (+AR,+N)
„Boiler" grades	K 10 I	St35.8 I	P235GH TC1
	K 18 I	St45.8 I	P265GH TC1
	K 10 III	St35.8 III	P235GH TC2
	K 18 III	St45.8 III	P265GH TC2
	16M	15Mo3	16Mo3
	15HM	13CrMo44	13CRMo4-5
	10H2M	10CrMo910	10CrMo9-10
„Precision" grades	R35 (BK, NBK)	St35 (BK, NBK)	E235 (+C,+N)
	18G2A (BK, NBK)	St52 (BK, NBK)	E355 (+C,+N)

Carbon steel. Cold-drawn seamless tubes

Pipes for pressure applications and for constructions

We supply tubes as per the following standards:
EN 10216-1 in grades P235TR1, P235TR2.
EN 10210 in grades S235JRH, S355J2H.
DIN 1629 in grades St37.0, St44.0, St52.0.
Other grades on prior agreement.

Outer tube diameter mm	Wall thickness range mm	Outer tube diameter mm	Wall thickness range mm	Outer tube diameter mm	Wall thickness range mm	Outer tube diameter mm	Wall thickness range mm
10,2	1,6–2,6	21,3	2,3–4,0	38,0	2,9–4,5	57,0	2,9–10,0
12,0	1,6–2,6	25,0	2,3–4,0	42,4	2,9–5,0	60,3	7,1–10,0
13,5	1,8–2,9	26,9	2,3–4,0	44,5	2,9–5,0	63,5	7,1–10,0
16,0	1,8–3,2	30,0	2,6–4,5	48,3	2,9–5,6	-	-
17,2	2,0–3,6	31,8	2,9–4,5	51,0	2,9–5,6	-	-
20,0	2,3–4,0	33,7	2,9–4,5	54,0	2,9–8,0	-	-

We supply the tubes in the following lengths:
- fabrication – structural pipes from 1.5 to 8.0 m – carrier pipes from 4.0 to 8.0 m, not more than 20% pipes in lengths from 2.0 to 4.0 are permitted as part of a single order,
- strict-dimensions with allowable tolerance of +10 mm or +15 mm,
- multiples – for lengths order below 3 m with allowance of 5 mm for each cut and allowable deviation for the entire multiple length as for strict lengths.

Precision tubes

We supply tubes as per the following standards:
EN 10305-1 and EN 10305-4 in grades E235, E355.
DIN 2391 in grades St35, St45, St52.

The following delivery statuses can be chosen for cold-drawn tubes:
BK – tubes without heat treatment after last drawing (white hard) – equivalent as per EN 10305-1 → +C
BKW– tubes drawn after last heat treatment with small reduction level (white soft) – equivalent as per EN 10305-1 → +LC
GBK – tubes after recrystallizing treatment in controlled atmosphere – equivalent as per EN 10305-1 → +A
NBK – tubes after normalizing treatment in controlled atmosphere – equivalent as per EN 10305-1 → +N
BKS – cold-drawn and stress relief-annealed tubes - equivalent as per EN 10305-1 → +SR

Services
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Carbon steel. Cold-drawn seamless tubes

Dimensions and tolerances of precision tubes as per EN 10305-1

Outer diameter D and tolerances		wall, T, mm												
		0,5	0,8	1	1,2	1,5	1,8	2	2,2	2,5	2,8	3	3,5	4
		inner diameter and tolerances, mm												
4	±0,08	3±0,15	2,4±0,15	2±0,15	1,6±0,15									
5		4±0,15	3,4±0,15	3±0,15	2,6±0,15									
6		5±0,15	4,4±0,15	4±0,15	3,6±0,15	3±0,15	2,4±0,15	2±0,15						
7		6±0,15	5,4±0,15	5±0,15	4,6±0,15	4±0,15	3,4±0,15	3±0,15						
8		7±0,15	6,4±0,15	6±0,15	5,6±0,15	5±0,15	4,4±0,15	4±0,15	3,6±0,15	3±0,25				
9		8±0,15	7,4±0,15	7±0,15	6,6±0,15	6±0,15	5,4±0,15	5±0,15	4,6±0,15	4±0,25	3,4±0,25			
10		9±0,15	8,4±0,15	8±0,05	7,6±0,15	7±0,15	6,4±0,15	6±0,15	5,6±0,15	5±0,15	4,4±0,25	4±0,25		
12		11±0,15	10,4±0,15	10±0,15	9,6±0,15	9±0,15	8,4±0,15	8±0,15	7,6±0,15	7±0,15	6,4±0,15	6±0,25	5±0,25	4±0,25
14		13±0,08	12,4±0,08	12±0,08	11,6±0,15	11±0,15	10,4±0,15	10±0,15	9,6±0,15	9±0,15	8,4±0,15	8±0,15	7±0,15	6±0,25
15		14±0,08	13,4±0,08	13±0,08	12,6±0,08	12±0,15	11,4±0,15	11±0,15	10,6±0,15	10±0,15	9,4±0,15	9±0,15	8±0,15	7±0,15
16		15±0,08	14,4±0,08	14±0,08	13,6±0,08	13±0,08	12,4±0,05	12±0,15	11,6±0,15	11±0,15	10,4±0,15	10±0,15	9±0,15	8±0,15
18		17±0,08	16,4±0,08	16±0,08	15,6±0,08	15±0,08	14,4±0,08	14±0,08	13,6±0,15	13±0,15	12,4±0,15	12±0,15	11±0,15	10±0,15
20		19±0,08	18,4±0,08	18±0,08	17,6±0,08	17±0,08	16,4±0,08	16±0,08	15,6±0,15	15±0,15	14,4±0,15	14±0,15	13±0,15	12±015
22		21±0,08	20,4±0,08	20±0,08	19,6±0,08	19±0,08	18,4±0,08	18±0,08	17,6±0,08	17±0,15	16,4±0,15	16±0,15	15±0,15	14±0,15
25		24±0,08	23,4±0,08	23±0,08	22,6±0,08	22±0,08	21,4±0,08	21±0,08	20,6±0,08	20±0,08	19,4±0,15	19±0,15	18±0,15	17±0,15
26		25±0,08	24,4±0,08	24±0,08	23,6±0,08	23±0,08	22,4±0,08	22±0,08	21,6±0,08	21±0,08	20,4±0,15	20±0,15	19±0,15	18±0,15
28		27±0,08	26,4±0,08	26±0,08	25,6±0,08	25±0,08	24,4±0,08	24±0,08	23,6±0,08	23±0,08	22,4±0,08	22±0,05	21±0,15	20±0,15
30		29±0,08	28,4±0,08	28±0,08	27,6±0,08	27±0,08	26,4±0,08	26±0,08	25,6±0,08	25±0,08	24,4±0,08	24±0,15	23±0,15	22±0,15
32	±0,15	31±0,15	30,4±0,15	30±0,15	29,6±0,15	29±0,15	28,4±0,15	28±0,15	27,6±0,15	27±0,15	26,4±0,15	26±0,15	25±0,15	24±0,15
35		34±0,15	33,4±,015	33±0,15	32,6±0,15	32±0,15	31,4±0,15	31±0,15	30,6±0,15	30±0,15	29,4±0,15	29±0,15	28±0,15	27±0,15
38		37±0,15	36,4±0,15	36±0,15	35,6±0,15	35±0,15	34,4±0,15	34±0,15	33,6±0,15	33±0,15	32,4±0,15	32±0,15	31±0,15	30±0,15
40		39±0,15	38,4±0,15	38±0,15	37,6±0,15	37±0,15	36,4±0,15	36±0,15	35,6±0,15	35±0,15	34,4±0,15	34±0,15	33±0,15	32±0,15
42				40±0,20	39,6±0,20	39±0,20	38,4±0,20	38±0,20	37,6±0,20	37±0,20	36,4±0,20	36±0,20	35±0,20	34±0,20
45				43±0,20	42,6±0,20	42±0,20	41,4±0,20	41±0,20	40,6±0,20	40±0,20	39,4±0,20	39±0,20	38±0,20	37±0,20
48				46±0,20	45,6±0,20	45±0,20	44,4±0,20	44±0,20	43,6±0,20	43±0,20	42,4±0,20	42±0,20	41±0,20	40±0,20
50				48±0,20	47,6±0,20	47±0,20	46,4±0,20	46±0,20	45,6±0,20	45±0,20	44,4±0,20	44±0,20	43±0,20	42±0,20
55	±0,25			53±0,25	52,6±0,25	52±0,25	51,4±0,25	51±0,25	50,6±0,25	50±0,25	49,4±0,25	49±0,25	48±0,25	47±0,25
60				58±0,25	57,6±0,25	57±0,25	56,4±0,25	56±0,25	55,6±0,25	55±0,25	54,4±0,25	54±0,25	53±0,25	52±0,25
65				63±0,30	62,6±0,30	62±0,30	61,4±0,30	61±0,30	60,6±0,30	60±0,30	59,4±0,30	59±0,30	58±0,30	57±0,30
70				68±0,30	67,6±0,30	67±0,30	66,4±0,30	66±0,30	65,6±0,30	65±0,30	64,4±0,30	64±0,30	63±0,30	62±0,30
75				73±0,35	72,6±0,35	72±0,35	71,4±0,35	71±0,35	70,6±0,35	70±0,35	69,4±0,35	69±0,35	68±0,35	67±0,35
80				78±0,35	77,6±0,35	77±0,35	76,4±0,35	76±0,35	75,6±0,35	75±0,35	74,4±0,35	74±0,35	73±0,35	72±0,35
85	±0,40					82±0,40	81,4±0,40	81±0,40	80,6±0,40	80±0,40	79,4±0,40	79±0,40	78±0,40	77±0,40
90						87±0,40	86,4±0,40	86±0,40	85,6±0,40	85±0,40	84,4±0,40	84±0,40	83±0,40	82±0,40
95								91±0,45	90,6±0,45	90±0,45	89,4±0,45	89±0,45	88±0,45	87±0,45
100								96±0,45	95,6±0,45	95±0,45	94,4±0,45	94±0,45	93±0,45	92±0,45
110	±0,50							106±0,50	105,6±0,50	105±0,50	104,4±0,50	104±0,50	103±0,50	102±0,50
120								116±0,50	115,6±0,50	115±0,50	114,4±0,50	114±0,50	113±0,50	112±0,50
130	±0,70									125±0,70	124,4±0,70	124±0,70	123±0,70	122±0,70
140										135±0,70	134,4±0,70	134±0,70	133±0,70	132±0,70
150	±0,80											144±0,80	143±0,80	142±0,80
160												154±0,80	153±0,80	152±0,80
170	±0,90											164±0,90	163±0,90	162±0,90
180													173±0,90	172±0,90
190	±1,0												183±1,0	182±1,0
200													193±1,0	192±1,0
220	±1,20													
240														
260	±1,30													

Seamless precision tubes are made of E235, E355 steel. We supply the tubes in commercial lengths of from 2 to 9 m or in strict lengths. Wall thickness tolerances are specified in the standards.

wall, T, mm														
4,5	5	5,5	6	7	8	9	10	12	14	16	18	20	22	25
inner diameter and tolerances, mm														
5±0,25														
6±0,25	5±0,25													
7±0,15	6±0,25	5±0,25	4±0,25											
9±0,15	8±0,15	7±0,25	6±0,25											
11±0,15	10±0,15	9±0,15	8±0,25	6±0,25										
13±0,15	12±0,15	11±0,15	10±0,15	8±0,25										
16±0,15	15±0,15	14±0,15	13±0,15	11±0,15	9±0,25									
17±0,15	15±0,15	15±0,15	14±0,15	12±0,15	10±0,25									
19±0,15	18±0,15	17±0,15	16±0,15	14±0,15	12±0,15									
21±0,15	20±0,15	19±0,15	18±0,15	16±0,15	14±0,15	12±0,15	10±0,25							
23±0,15	22±0,15	21±0,15	20±0,15	18±0,15	16±0,15	14±0,15	12±0,25							
26±0,15	25±0,15	24±0,15	23±0,15	21±0,15	19±0,15	17±0,15	15±0,15							
29±0,15	28±0,15	27±0,15	26±0,15	24±0,15	22±0,15	20±0,15	18±0,15							
31±0,15	30±0,15	29±0,15	28±0,15	26±0,15	24±0,15	22±0,15	20±0,15							
33±0,20	32±0,20	31±0,20	30±0,20	28±0,20	26±0,20	24±0,20	22±0,20							
36±0,20	35±0,20	34±0,20	33±0,20	31±0,20	29±0,20	27±0,20	25±0,20							
39±0,20	38±0,20	37±0,20	36±0,20	34±0,20	32±0,20	30±0,20	28±0,20							
41±0,20	40±0,20	39±0,20	38±0,20	36±0,20	34±0,20	32±0,20	30±0,20							
46±0,25	45±0,25	44±0,25	43±0,25	41±0,25	39±0,25	37±0,25	35±0,25	31±0,25						
51±0,25	50±0,25	49±0,25	48±0,25	46±0,25	44±0,25	42±0,25	40±0,25	36±0,25						
56±0,30	55±0,30	54±0,30	53±0,30	51±0,30	49±0,30	47±0,30	45±0,30	41±0,30	37±0,30					
61±0,30	60±0,30	59±0,30	58±0,30	56±0,30	54±0,30	52±0,30	50±0,30	46±0,30	42±0,30					
66±0,35	65±0,35	64±0,35	63±0,35	61±0,35	59±0,35	57±0,35	55±0,35	51±0,35	47±0,35	43±0,35				
71±0,35	70±0,35	69±0,35	68±0,35	66±0,35	64±0,35	62±0,35	60±0,35	56±0,35	52±0,35	48±0,35				
76±0,40	75±0,40	74±0,40	73±0,40	71±0,40	69±0,40	67±0,40	65±0,40	61±0,40	57±0,40	53±0,40				
81±0,40	80±0,40	79±0,40	78±0,40	76±0,40	74±0,40	72±0,40	70±0,40	66±0,40	62±0,40	58±0,40				
86±0,45	85±0,45	84±0,45	83±0,45	81±0,45	79±0,45	77±0,45	75±0,45	71±0,45	67±0,45	63±0,45	59±0,45			
91±0,45	90±0,45	89±0,45	88±0,45	86±0,45	84±0,45	82±0,45	80±0,45	76±0,45	72±0,45	68±0,45	64±0,45			
101±0,50	100±0,50	99±0,50	98±0,50	96±0,50	94±0,50	92±0,50	90±0,50	86±0,50	82±0,50	78±0,50	74±0,50			
111±0,50	110±0,50	109±0,50	108±0,50	106±0,50	104±0,50	102±0,50	100±0,50	96±0,50	92±0,50	88±0,50	84±0,50			
121±0,70	120±0,70	119±0,70	118±0,70	116±0,70	114±0,70	112±0,70	110±0,70	106±0,70	102±0,70	98±0,70	94±0,70			
131±0,70	130±0,70	129±0,70	128±0,70	126±0,70	124±0,70	122±0,70	120±0,70	116±0,70	112±0,70	108±0,70	104±0,70			
141±0,80	140±0,80	139±0,80	138±0,80	136±0,80	134±0,80	132±0,80	130±0,80	126±0,80	122±0,80	118±0,80	114±0,80	110±0,80		
151±0,80	150±0,80	149±0,80	148±0,80	146±0,80	144±0,80	142±0,80	140±0,80	136±0,80	132±0,80	128±0,80	124±0,80	120±0,80		
161±0,90	160±0,90	159±0,90	158±0,90	156±0,90	154±0,90	152±0,90	150±0,90	146±0,90	142±0,90	138±0,90	134±0,90	130±0,90		
171±0,90	170±0,90	169±0,90	168±0,90	166±0,90	164±0,90	162±0,90	160±0,90	156±0,90	152±0,90	148±0,90	144±0,90	140±0,90		
181±1,0	180±1,0	179±1,0	178±1,0	176±1,0	174±1,0	172±1,0	170±1,0	166±1,0	162±1,0	158±1,0	154±1,0	150±1,0	146±1,0	
191±1,0	190±1,0	189±1,0	188±1,0	186±1,0	184±1,0	182±1,0	180±1,0	176±1,0	172±1,0	168±1,0	164±1,0	160±1,0	156±1,0	
211±1,2	210±1,2	209±1,2	208±1,2	206±1,2	204±1,2	202±1,2	200±1,2	196±1,2	192±1,2	188±1,2	184±1,2	180±1,2	176±1,2	170±1,2
231±1,2	230±1,2	229±1,2	228±1,2	226±1,2	224±1,2	222±1,2	220±1,2	216±1,2	212±1,2	206±1,2	204±1,2	200±1,2	196±1,2	109±1,2
	250±1,3	249±1,3	248±1,3	246±1,3	244±1,3	242±1,3	240±1,3	236±1,3	232±1,3	228±1,3	224±1,3	220±1,3	216±1,3	210±1,3
				↑T=0,025					↑D					

Carbon steel. Welded tubes

Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Product	Standard	Grade
Structural tubes		
Structural hollow sections made of low-alloy and fine-grain cold-formed structural steel	EN 10219	S235JRH S275J0H / MH / MLH S355J2H / K2H / MH / MLH S420MH / MLH S460MH / MLH
Structural hollow sections made of low-alloy and fine-grain hot-formed structural steel	EN 10210	S235JRH S275J0H / NH / NLH S355J2H / K2H / NH / NLH S420NH / NLH S460NH / NLH
Pipes for pressure application		
Non-alloy steel pipes and fittings for water and other aqueous fluid transport	EN 10224	L235 L275 L355
Non-alloy steel pipes for welding and threading	EN 10255	S195T
Welded steel pipes for pressure applications	EN 10217	
Non-alloy steel pipes having specific properties at room temperature	EN 10217-1	P195TR1 / TR2 P235TR1 / TR2 P265TR1 / TR2
Electrically welded non-alloy and alloy steel pipes having specific properties at higher temperature	EN 10217-2	P195GH P235GH P265GH 16Mo3
Fine-grain allow steel pipes	EN 10217-3	P275NL1 /NL2 P355N / NH / NL1 / NL2 P460N / NH / NL1 / NL2
Electrically welded non-alloy steel pipes having specific properties at low temperature	EN 10217-4	P215NL P265NL
Electric-welded non-alloy and alloy steel pipes having specific properties at higher temperature	EN 10217-5	P235GH P265GH 16Mo3
Submerged arc-welded non-alloy and alloy steel pipes having specific properties at reduced temperature	EN 10217-6	P215NL P265NL
Pipes for combustible fluids		
Line pipes for gas and combustible media	EN 10208-2 ISO 3183	L245NB / MB L290NB / MB L360NB / MB L415NB / MB L450MB L485MB L555MB
Line pipes for use in pipeline transportation systems in the petroleum and gas industries	API Spec 5L	A25CL - I / II A B X42 X46 / X52 X56 / X60

Carbon steel. Welded tubes and profiles

Welded tubes

Welded tube rolling

- hot
- cold

Tube fabrication process

- electric resistance welding (ERW or HFI)
- submerged arc welding (SAW):
  with longitudinal weld (SAWL)
  with spiral weld (SAWH)

Type of tube surface

- black
- zinc-coated as per EN 10240 grade A1 - made of zinc--coated strips
- coated

Available stock sizes vary from ø 17,2 to ø 1420 mm (also with internal bleed removed)
- **structural tubes** (in grades S235JRH, S355J2H)
- **pressure pipes** (from 3/8" to 40" in light, medium and heavy range, lengths: 6,000, 7,000 and 12,000 mm)
- **pipes for threading**
- **welded precision tubes** as per EN 10305-2, EN 10305-3 in such grades as e.g. E220, E260, E320.

Application

Welded structural pipes – for various types of steel structures and equipment
Welded pressure pipes – for pipeline construction, transport of fluids, gases and their mixtures.

Surface protection

- zinc-coating
  Carefully selected chemical contents enable hot-dip galvanizing of the tubes.
  In effect, an even and shiny zinc layer is formed. The entire tube and profile portfolio can be zinc-coated

- coatings
  The most broadly used ones are three-layer polyethylene corrosion-resistant coating (3 LPE standard and enhanced), fabricated as per DIN 30670, extruded and applied hot, or as per DIN 30672 and multiple--layer strip internal insulation, hot or cold applied.

- paint coating

$$\text{Theoretical weight per 1 m of the tube} = \frac{(\text{diameter - wall}) \times \text{wall}}{40{,}5}$$

Services
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Threading
- Beveling
- Marking
- 3D cutting

Structural hollow sections

Grades

- Non-alloy structural steel
  S235JRH, S275J0H, S275J2H, S355J0H, S355J2H, S355K2H,

- Fine-grain structural steel
  (required minimum order quantities)
  S275NH, S275NLH, S355NH, S355NLH, S460NH, S460NLH,

Lengths in stock

L=6 000 mm, L=12 000 mm

Application

- Civil structure members (columns, floor beams, purlins, external walls)
- Car and pipeline bridges
- Telecom poles, notice board and lighting poles
- Bridges, platforms, stairs, railings, barriers, banisters
- Greenhouse, container, tank frames
- Parts of cranes, lifts, conveyors and platforms
- Parts of agricultural machines and vehicles (body frames, trailers, semi-trailers, railway car and ship parts)
- Ducts, parts of A/C equipment and fire protection systems
- Scaffolding, warehouse racks

Services
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

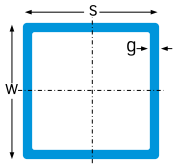
Cold-formed open sections as per EN 10162

- C-sections
- lipped C-sections
- angles

Broad range of dimensions.
Short turnaround times for non-standard dimensions.

Services
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Carbon steel. Structural hollow sections



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Square sections

Dimensions s x w (mm)	Wall thickness g in mm					Cold-formed as per EN 10219 **Hot-finished as per EN 10210**	
	1,5	2,0	3,0	4,0	5,0	6,0	6,3
	Theoretical weight kg/m						
15 x 15	0,59	0,74					
20 x 20	0,83	1,05	1,42				
25 x 25	1,06	1,36	1,89				
30 x 30	1,30	1,68	2,36	2,94			
40 x 40	1,77	2,31	3,30	4,20	4,99		
40 x 40			**3,41**	**4,39**	**5,28**	**6,10**	**6,33**
50 x 50	2,24	2,93	4,25	5,45	6,56	7,56	7,57
50 x 50			**4,35**	**5,64**	**6,85**	**7,99**	**8,31**
60 x 60		3,56	5,19	6,71	8,13	9,45	9,55
60 x 60			**5,29**	**6,90**	**8,42**	**9,87**	**10,30**
70 x 70		4,19	6,13	7,97	9,70	11,33	11,53
70 x 70			**6,24**	**8,15**	**9,99**	**11,75**	**12,27**
80 x 80		4,82	7,07	9,22	11,27	13,21	13,51
80 x 80			**7,18**	**9,41**	**11,56**	**13,64**	**14,25**
90 x 90		5,45	8,01	10,48	12,84	15,10	15,49
90 x 90			**8,12**	**10,67**	**13,13**	**15,52**	**16,22**
100 x 100		6,07	8,96	11,73	14,41	16,98	17,47
100 x 100				**11,92**	**14,70**	**17,41**	**18,20**
110 x 110			9,90	12,99	15,98	18,47	19,44
110 x 110				**13,18**	**16,27**	**19,29**	**20,18**
120 x 120			10,84	14,25	17,55	20,75	21,42
120 x 120				**14,43**	**17,84**	**21,17**	**22,16**
130 x 130			11,78	15,50	19,12	22,63	23,40
130 x 130					**19,41**		**24,14**
140 x 140			12,72	16,76	20,69	24,52	25,38
140 x 140				**16,95**	**21,98**	**24,94**	**26,11**
150 x 150			13,67	18,01	22,26	26,40	27,36
150 x 150					**22,55**	**26,83**	**28,09**
160 x 160			14,61	19,27	23,83	28,29	29,34
160 x 160					**24,12**	**28,71**	**30,07**
180 x 180			16,49	21,78	26,97	32,05	33,29
180 x 180					**27,26**	**32,48**	**34,03**
200 x 200			18,38	24,29	30,11	35,82	37,25
200 x 200					**30,40**	**36,25**	**37,98**
220 x 220				26,81	33,25	39,59	41,20
220 x 220					**33,54**	**40,01**	**41,94**
250 x 250				30,57	37,96	45,24	47,14
250 x 250					**38,25**	**45,67**	**47,87**
260 x 260				31,83	39,53	47,13	49,12
260 x 260						**47,55**	**49,85**
300 x 300					45,81	54,66	57,03
300 x 300						**55,09**	**57,77**
350 x 350							64,08
350 x 350							**67,66**

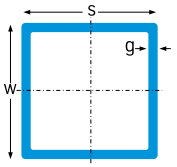
The standard dimensional range was indicated. Warehouse stock covers certain dimensions only.

Carbon steel. Structural hollow sections

Square sections

Dimensions s x w (mm)	Wall thickness g in mm					Cold-formed as per EN 10219 **Hot-finished as per EN 10210**	
	8,0	8,8	10,0	12,5	14,2	16,0	20,0
	Theoretical weight kg/m						
50 x 50	8,83						
50 x 50	**10,01**						
60 x 60	11,34						
60 x 60	**12,52**	**13,50**					
70 x 70	13,85	14,82	16,14				
70 x 70	**15,04**	**16,25**					
80 x 80	16,36	17,59	19,28				
80 x 80	**17,55**	**19,02**	**21,14**				
90 x 90	18,87	20,35	22,42				
90 x 90	**20,06**	**21,78**	**24,28**				
100 x 100	21,39	23,11	25,56	29,08			
100 x 100	**22,57**	**24,55**	**27,42**	**33,03**			
110 x 110	23,90	25,88	28,70				
110 x 110	**25,08**	**27,31**	**30,56**	**36,95**	**41,02**		
120 x 120	26,41	28,64	31,84	36,93			
120 x 120	**27,60**	**30,07**	**33,70**	**40,88**			
130 x 130	28,92	31,40	34,98	40,85			
130 x 130	**30,11**	**32,84**	**36,84**	**44,80**	**49,93**	**55,12**	
140 x 140	31,43	34,17	38,12	44,78			
140 x 140	**32,62**	**35,60**	**39,98**	**48,73**	**54,39**	**60,13**	
150 x 150	33,95	36,93	41,26	48,70		58,70	
150 x 150	**35,13**	**38,36**	**43,12**	**52,65**	**58,85**	**65,17**	
160 x 160	36,46	39,69	44,40	52,63		63,70	
160 x 160	**37,64**	**41,13**	**46,26**	**56,58**	**63,31**	**70,19**	
180 x 180	41,48	45,22	50,68	60,48		73,80	
180 x 180	**42,67**	**46,65**	**52,54**	**64,43**	**72,23**	**80,24**	
200 x 200	46,51	50,75	56,96	68,33		83,80	
200 x 200	**47,69**	**52,18**	**58,82**	**72,28**	**81,15**	**90,28**	
220 x 220	51,53	56,27	63,24	76,18	84,97	93,90	
220 x 220	**52,72**	**57,71**	**65,10**	**80,13**	**90,06**	**100,33**	
250 x 250	59,07	64,56	72,66	87,95	98,34	109,00	
250 x 250	**60,25**	**66,00**	**74,52**	**91,90**	**103,44**	**115,41**	
260 x 260	61,58	67,32	75,80	91,88	102,80	114,00	
260 x 260	**62,76**	**68,76**	**77,66**	**95,83**	**107,90**	**120,43**	
300 x 300	71,63	78,38	88,36	107,58	120,64	134,06	
300 x 300	**72,81**	**79,81**	**90,22**	**111,53**	**125,73**	**140,53**	
350 x 350	84,19	92,19	104,06	127,20	142,93	159,18	
350 x 350	**85,37**	**93,63**	**105,92**	**131,15**	**148,03**	**165,65**	
400 x 400	96,75	106,01	119,76	146,83	165,23	184,30	225,16
400 x 400	**97,93**	**107,44**	**121,62**	**150,78**	**170,32**	**190,77**	**235,27**

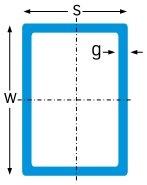
The standard dimensional range was indicated. Warehouse stock covers certain dimensions only.



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Carbon steel. Structural hollow sections



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Rectangular profiles

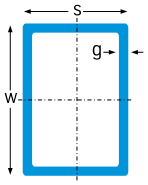
Dimensions s x w (mm)	Wall thickness g in mm									Cold-formed as per EN 10219 **Hot-finished as per EN 10210**
	1,5	2,0	3,0	4,0	5,0	6,0	6,3	8,0	8,8	10,0
	Theoretical weight kg/m									
30 x 10	0,83	1,05								
30 x 15	0,94	1,21	1,65							
30 x 18	1,01	1,30	1,80							
30 x 20	1,06	1,36	1,89							
40 x 20	1,30	1,68	2,36							
40 x 25		1,83	2,60							
40 x 27		1,90	2,69							
45 x 20		1,83	2,60							
50 x 30	1,77	2,31	3,30	4,20						
60 x 30	2,00	2,62	3,77	4,83						
60 x 40	2,24	2,93	4,25	5,45	6,56	7,56				
60 x 40				**5,64**	**6,85**	**7,99**	**8,31**			
70 x 40		3,25	4,72	6,08	7,34	8,50				
70 x 40				**6,27**	**7,64**	**8,93**				
70 x 50		3,56	5,19	6,71	8,13	9,45				
70 x 50				**6,90**	**8,42**	**9,87**	**10,29**			
80 x 20		2,93	4,25	5,45	6,56	7,56				
80 x 30		3,25	4,72	6,08	7,34	8,50				
80 x 40		3,56	5,19	6,71	8,13	9,45				
80 x 40				**6,90**	**8,42**	**9,87**	**10,29**			
80 x 50		3,88	5,66	7,34	8,91	10,39				
80 x 50				**7,53**	**9,21**	**10,81**	**11,28**			
80 x 60		4,19	6,13	7,97	9,70	11,33				
80 x 60				**8,15**	**9,99**	**11,75**	**12,27**	**15,04**		
90 x 50		4,19	6,13	7,97	9,70	11,33				
90 x 50				**8,15**	**9,99**	**11,75**	**12,27**	**15,04**		
100 x 40		4,19	6,13	7,97	9,70	11,33				
100 x 40				**8,15**	**9,99**	**11,75**	**12,27**	**15,04**		
100 x 50		4,50	6,60	8,59	10,48	12,27	12,52	15,11		
100 x 50				**8,78**	**10,78**	**12,70**	**13,26**	**16,29**	**17,64**	
100 x 60		4,82	7,07	9,22	11,27	13,21	13,51	16,36	17,59	19,28
100 x 60				**9,41**	**11,56**	**13,64**	**14,25**	**17,55**	**19,02**	**21,14**
100 x 80		5,45	8,01	10,48	12,84	15,10	15,49	18,87	20,35	22,42
100 x 80				**10,67**	**13,13**	**15,52**	**16,22**	**20,06**	**21,78**	**24,28**
120 x 40		4,82	7,07	9,22	11,27	13,21				
120 x 40				**9,41**	**11,56**	**13,64**	**14,25**	**17,55**		
120 x 60		5,45	8,01	10,48	12,84	15,10	15,49	18,87	20,35	22,42
120 x 60				**10,67**	**13,13**	**15,52**	**16,22**	**20,06**	**21,78**	**24,28**
120 x 80		6,07	8,96	11,73	14,41	16,98	17,47	21,39	23,11	25,56
120 x 80				**11,92**	**14,70**	**17,41**	**18,20**	**22,57**	**24,55**	**27,42**

The standard dimensional range was indicated. Warehouse stock covers certain dimensions only.

Carbon steel. Structural hollow sections

Rectangular profiles

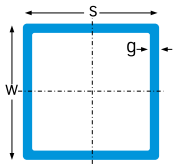
Dimensions s x w (mm)	Wall thickness g in mm											
	3,0	4,0	5,0	6,0	6,3	8,0	8,8	10,0	12,5	14,2	16,0	20,0
	Theoretical weight kg/m											
140 x 70	9,43	12,36	15,19	17,92	18,46	22,64						
140 x 70		**12,55**	**15,49**	**18,35**	**19,19**	**23,83**	**25,93**	**28,99**				
140 x 80	9,90	12,99	15,98	18,87	19,44	23,90	25,88	28,70				
140 x 80		**13,18**	**16,27**	**19,29**	**20,18**	**25,08**	**27,31**	**30,56**				
150 x 50		11,73	14,41	16,98	17,47	21,39						
150 x 50		**11,92**	**14,70**	**17,41**	**18,20**	**22,57**	**24,55**	**27,42**				
150 x 100	11,31	14,87	18,33	21,69	22,41	27,67	30,02	33,41				
150 x 100		**15,06**	**18,63**	**22,12**	**23,15**	**28,85**	**31,46**	**35,27**	**42,84**			
160 x 80	10,84	14,25	17,55	20,75	21,42	26,41	28,64	31,84				
160 x 80		**14,43**	**17,84**	**21,17**	**22,16**	**27,60**	**30,07**	**33,70**	**40,88**			
160 x 90		14,87	18,33	21,69	22,41	27,67	30,02	33,41				
160 x 90		**15,06**	**18,63**	**22,12**	**23,15**	**28,85**	**31,46**	**35,27**	**42,84**			
180 x 60	10,84	14,25	17,55	20,75	21,42	26,41	28,64	31,84				
180 x 60			**17,84**	**21,17**	**22,16**	**27,60**	**30,07**	**33,70**	**40,88**			
180 x 80	11,78	15,50	19,12	22,63	23,40	28,92	31,40	34,98				
180 x 80			**19,41**	**23,06**	**24,14**	**30,11**	**32,84**	**36,84**	**44,80**			
180 x 100	12,72	16,76	20,69	24,52	25,38	31,43	34,17	38,12				
180 x 100			**20,98**	**24,94**	**26,11**	**32,62**	**35,60**	**39,98**	**48,73**			
200 x 100	13,67	18,01	22,26	26,40	27,36	33,95	36,93	41,26	48,70			
200 x 100			**22,55**	**26,83**	**28,09**	**35,13**	**38,36**	**43,12**	**52,65**	**58,85**	**65,17**	
200 x 120			23,83	28,29	29,34	36,46	39,69	44,40	52,63			
200 x 120			**24,12**	**28,71**	**30,07**	**37,64**	**41,13**	**46,26**	**56,58**	**63,31**	**70,19**	
200 x 150	16,02	21,15	26,18	31,11	32,30	40,23	43,84	49,11	58,52			
200 x 150			**26,48**	**31,54**	**33,04**	**41,41**	**45,27**	**50,97**	**62,47**	**70,00**	**77,73**	
220 x 120		20,53	25,40	30,17	31,31	38,97	42,46	47,54	56,55			
220 x 120			**25,69**	**30,59**	**32,05**	**40,16**	**43,89**	**49,40**	**60,50**	**67,77**	**75,21**	
250 x 100	16,02	21,15	26,18	31,11	32,30	40,23	43,84	49,11	58,52			
250 x 100			**26,48**	**31,54**	**33,04**	**41,41**	**45,27**	**50,97**	**62,47**	**70,00**	**77,73**	
250 x 150		24,29	30,11	35,82	37,25	46,51	50,75	56,96	68,33			
250 x 150			**30,40**	**36,25**	**37,98**	**47,69**	**52,18**	**58,82**	**72,28**	**81,15**	**90,29**	
260 x 140				35,82	37,25	46,51	50,75	56,96	68,33			
260 x 140					**37,98**	**47,69**	**52,18**	**58,82**	**72,28**	**81,15**	**90,29**	
260 x 180				39,59	41,20	51,53	56,27	63,24	76,18			
260 x 180					**41,94**	**52,72**	**57,71**	**65,10**	**80,13**	**90,06**	**100,33**	
300 x 100		24,29	30,11	35,82	37,25	46,51	50,75	56,96	68,33			
300 x 100			30,40	**36,25**	**37,98**	**47,69**	**52,18**	**58,82**	**72,28**	**81,15**	**90,29**	
300 x 150				40,53	42,19	52,79	57,65	64,81	78,14			
300 x 150					**42,93**	**53,97**	**59,09**	**66,67**	**82,09**	**92,29**	**102,85**	
300 x 200		30,57	37,96	45,24	47,14	59,07	64,56	72,66	87,95			
300 x 200			38,25	**45,67**	**47,87**	**60,25**	**66,00**	**74,52**	**91,90**	**103,44**	**115,41**	
350 x 250					57,03	71,63	78,38	88,36	107,58			
350 x 250					**57,77**	**72,81**	**79,81**	**90,22**	**111,53**	**125,73**	**140,53**	
400 x 200				54,66	57,03	71,63	78,38	88,36	107,58			
400 x 200					**57,77**	**72,81**	**79,81**	**90,22**	**111,53**	**125,73**	**140,53**	
400 x 300				64,08	66,92	84,19	92,19	104,06	127,20	142,93	159,18	
400 x 300					**67,66**	**85,37**	**93,63**	**105,92**	**131,15**	**148,03**	**165,65**	
450 x 250				64,08	66,92	84,19	92,19	104,06	127,20	142,93	159,18	
450 x 250					**67,66**	**85,37**	**93,63**	**105,92**	**131,15**	**148,03**	**165,65**	
500 x 300						96,75	106,01	119,76	146,83	165,23	184,30	225,16
500 x 300						**97,93**	**107,44**	**121,62**	**150,78**	**170,32**	**190,77**	**235,27**



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Carbon steel. Precision hollow sections



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

Square profiles as per EN 10305-5 (as per DIN 2395)

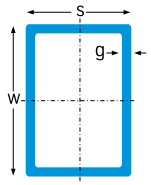
Dimensions w x s x g mm	Theoretical weight kg/m
15 x 15 x 1,50	0,63
15 x 15 x 2,00	0,81
20 x 20 x 1,50	0,87
20 x 20 x 2,00	1,12
20 x 20 x 2,50	1,33
20 x 20 x 3,00	1,60
25 x 25 x 1,50	1,10
25 x 25 x 2,00	1,44
25 x 25 x 2,50	1,76
25 x 25 x 3,00	1,92
30 x 30 x 1,50	1,34
30 x 30 x 2,00	1,75
30 x 30 x 2,50	2,15
30 x 30 x 3,00	2,39
30 x 30 x 4,00	3,32
35 x 35 x 1,50	1,57
35 x 35 x 2,00	2,07
35 x 35 x 2,50	2,54
35 x 35 x 3,00	2,86
40 x 40 x 1,50	1,81
40 x 40 x 2,00	2,38
40 x 40 x 2,50	2,93
40 x 40 x 3,00	3,33
40 x 40 x 4,00	4,25
45 x 45 x 1,50	2,05
45 x 45 x 2,00	2,69
45 x 45 x 2,50	3,33
45 x 45 x 3,00	3,80
45 x 45 x 4,00	4,88
50 x 50 x 1,50	2,28
50 x 50 x 2,00	3,01
50 x 50 x 2,50	3,72
50 x 50 x 3,00	4,28
50 x 50 x 4,00	5,51
50 x 50 x 5,00	6,56
60 x 60 x 2,00	3,64
60 x 60 x 2,50	4,50
60 x 60 x 3,00	5,22
60 x 60 x 4,00	6,76
60 x 60 x 5,00	8,13
70 x 70 x 2,00	4,26
70 x 70 x 2,50	5,29
70 x 70 x 3,00	6,16
70 x 70 x 4,00	8,02
70 x 70 x 5,00	9,70
80 x 80 x 2,00	4,89
80 x 80 x 2,50	6,07
80 x 80 x 3,00	7,10
80 x 80 x 4,00	9,28
80 x 80 x 5,00	11,30
90 x 90 x 3,00	8,04
90 x 90 x 4,00	10,50
90 x 90 x 5,00	12,80
100 x 100 x 2,00	6,15
100 x 100 x 3,00	8,99
100 x 100 x 4,00	11,80
100 x 100 x 5,00	14,40

The standard dimensional range was indicated. Warehouse stock covers certain dimensions only.

Carbon steel. Precision hollow sections

Square profiles as per EN 10305-5 (as per DIN 2395)

Dimensions w x s x g mm	Theoretical weight kg/m
20 x 10 x 1,50	0,63
20 x 10 x 2,00	0,81
20 x 15 x 1,50	0,75
20 x 15 x 2,00	0,97
25 x 15 x 1,50	0,87
25 x 15 x 2,00	1,12
30 x 10 x 1,50	0,87
30 x 10 x 2,00	1,12
30 x 15 x 1,50	0,99
30 x 15 x 2,00	1,28
30 x 15 x 3,00	1,84
30 x 20 x 1,50	1,10
30 x 20 x 2,00	1,44
30 x 20 x 2,50	1,76
30 x 20 x 3,00	1,92
30 x 25 x 2,00	1,59
35 x 15 x 2,00	1,44
35 x 15 x 2,50	1,76
35 x 20 x 1,50	1,22
35 x 20 x 2,00	1,59
35 x 25 x 2,00	1,75
35 x 25 x 2,50	2,15
35 x 25 x 3,00	2,39
40 x 10 x 1,50	1,10
40 x 10 x 2,00	1,44
40 x 15 x 1,50	1,22
40 x 15 x 2,00	1,59
40 x 20 x 1,50	1,34
40 x 20 x 2,00	1,75
40 x 20 x 2,50	2,15
40 x 25 x 1,50	1,46
40 x 25 x 2,00	1,91
40 x 25 x 2,50	2,34
40 x 25 x 3,00	2,63
40 x 30 x 1,50	1,57
40 x 30 x 2,00	2,07
40 x 30 x 2,50	2,54
40 x 30 x 3,00	2,86
45 x 25 x 2,00	2,07
50 x 20 x 1,50	1,57
50 x 20 x 2,00	2,07
50 x 20 x 3,00	2,86
50 x 25 x 1,50	1,69
50 x 25 x 2,00	2,22
50 x 25 x 2,50	2,74
50 x 25 x 3,00	3,10
50 x 30 x 1,50	1,81
50 x 30 x 2,00	2,38
50 x 30 x 2,50	2,93
50 x 30 x 3,00	3,33
50 x 30 x 4,00	4,25
50 x 34 x 2,00	2,51
50 x 40 x 1,50	2,05
50 x 40 x 2,00	2,69
50 x 40 x 2,50	3,33
50 x 40 x 3,00	3,80
50 x 40 x 4,00	4,88
55 x 34 x 2,00	2,66
60 x 20 x 1,50	1,81
60 x 20 x 2,00	2,38
60 x 20 x 3,00	3,33
60 x 30 x 1,50	2,05
60 x 30 x 2,00	2,69
60 x 30 x 2,50	3,33
60 x 30 x 3,00	3,80
60 x 40 x 1,50	2,27
60 x 40 x 2,00	3,01
60 x 40 x 2,50	3,72
60 x 40 x 3,00	4,28
60 x 40 x 4,00	5,51
60 x 50 x 2,00	3,32
60 x 50 x 2,50	4,11
60 x 50 x 3,00	4,75
70 x 20 x 2,00	2,69
70 x 20 x 3,00	3,80
70 x 30 x 2,00	3,01
70 x 30 x 3,00	4,28
70 x 30 x 4,00	5,51
70 x 40 x 2,00	3,32
70 x 40 x 3,00	4,75
70 x 40 x 4,00	6,14
70 x 40 x 5,00	7,34
70 x 50 x 2,00	3,64
70 x 50 x 3,00	5,22
70 x 50 x 4,00	6,76
80 x 20 x 2,00	3,01
80 x 20 x 3,00	4,28
80 x 30 x 2,00	3,32
80 x 30 x 3,00	4,75
80 x 30 x 4,00	6,14
80 x 40 x 2,00	3,64
80 x 40 x 3,00	5,22
80 x 40 x 4,00	6,76
80 x 50 x 2,00	3,95
80 x 50 x 3,00	5,69
80 x 50 x 4,00	7,39
80 x 60 x 2,00	4,26
80 x 60 x 3,00	6,16
80 x 60 x 4,00	8,02
100 x 20 x 2,00	3,64
100 x 20 x 3,00	6,22
100 x 30 x 3,00	5,69
100 x 30 x 4,00	7,39
100 x 40 x 2,00	4,26
100 x 40 x 3,00	6,16
100 x 40 x 4,00	8,02
100 x 50 x 2,00	4,58
100 x 50 x 3,00	6,63
100 x 50 x 4,00	8,65
100 x 50 x 5,00	10,05
100 x 60 x 3,00	7,1
100 x 60 x 4,00	9,28
100 x 60 x 5,00	11,3
100 x 80 x 3,00	8,04
100 x 80 x 4,00	10,50
100 x 80 x 5,00	12,80
120 x 40 x 2,00	4,89
120 x 40 x 3,00	7,10
120 x 40 x 4,00	9,28
120 x 40 x 5,00	11,30
120 x 60 x 2,00	5,52
120 x 60 x 3,00	8,04
120 x 60 x 4,00	10,50
120 x 60 x 5,00	12,80
120 x 80 x 3,00	8,99
120 x 80 x 4,00	11,80
120 x 80 x 5,00	14,40

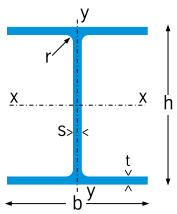


Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding
- Marking
- 3D cutting

The standard dimensional range was indicated. Warehouse stock covers certain dimensions only.

Carbon steel. Hot-rolled sections



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

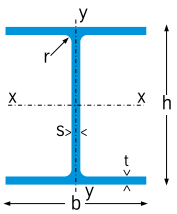
Wide flange beams, tolerances EN 10034

EN		Dimensions h	b	s	t	r	Cross-sectional area	Theoretical weight	Section properties Ix	Iy	Wx	Wy
		mm					cm^2	kg/m	cm^4		cm^3	
HEA	100	96	100	5	8	12	21,2	16,7	349	134	72,8	26,8
HEB	100	100	100	6	10	12	26,0	20,4	450	167	89,9	33,5
HEM	100	120	106	12	20	12	53,2	41,8	1140	399	190	75,3
HEA	120	114	120	5	8	12	25,3	19,9	606	231	106	38,5
HEB	120	120	120	6,5	11	12	34,0	26,7	864	318	144	52,9
HEM	120	140	126	12,5	21	12	66,4	52,1	2020	703	288	112
HEA	140	133	140	5,5	8,5	12	31,4	24,7	1030	389	155	55,6
HEB	140	140	140	7	12	12	43,0	33,7	1510	550	216	78,5
HEM	140	160	146	13	22	12	80,6	63,2	3290	1140	411	157
HEA	160	152	160	6	9	15	38,8	30,4	1670	616	220	76,9
HEB	160	160	160	8	13	15	54,3	42,6	2490	889	311	111
HEM	160	180	166	14	23	15	97,1	76,2	5100	1760	566	212
HEA	180	171	180	6	9,5	15	45,3	35,5	2510	925	294	103
HEB	180	180	180	8,5	14	15	65,3	51,2	3830	1360	426	151
HEM	180	200	186	14,5	24	15	113	88,9	7480	2580	748	277
HEA	200	190	200	6,5	10	18	53,8	42,3	3690	1340	389	134
HEB	200	200	200	9	15	18	78,1	61,3	5700	2000	570	200
HEM	200	220	206	15	25	18	131	103	10640	3650	967	354
HEA	220	210	220	7	11	18	64,3	50,5	5410	1950	515	178
HEB	220	220	220	9,5	16	18	91,0	71,5	8090	2840	736	258
HEM	220	240	226	15,5	26	18	149	117	14600	5010	1220	444
HEA	240	230	240	7,5	12	21	76,8	60,3	7760	2770	675	231
HEB	240	240	240	10	17	21	106	83,2	11260	3920	938	327
HEM	240	270	248	18	32	21	200	157	24290	8150	1800	657
HEA	260	250	260	7,5	12,5	24	86,8	68,2	10450	3670	836	282
HEB	260	260	260	10	17,5	24	118	93,0	14920	5130	1150	395
HEM	260	290	268	18	32,5	24	220	172	31310	10450	2160	780
HEA	280	270	280	8	13	24	97,3	76,4	13670	4760	1010	340
HEB	280	280	280	10,5	18	24	131	103	19270	6590	1380	471
HEM	280	310	288	18,5	33	24	240	189	39550	13160	2550	914
HEA	300	290	300	8,5	14	27	113	88,3	18260	6310	1260	421
HEB	300	300	300	11	19	27	149	117	25170	8560	1680	571
HEM	300	340	310	21	39	27	303	238	59200	19400	3480	1250
HEA	320	310	300	9	15,5	27	124	97,6	22930	6990	1480	466
HEB	320	320	300	11,5	20,5	27	161	127	30820	9240	1930	616
HEM	320	359	309	21	40	27	312	245	68135	19709	3796	1276
HEA	340	330	300	9,5	16,5	27	133	105	27690	7440	1680	496
HEB	340	340	300	12	21,5	27	171	134	36660	9690	2160	646
HEM	340	377	309	21	40	27	316	248	76370	19710	4050	1280
HEA	360	350	300	10	17,5	27	143	112	33090	7890	1890	526
HEB	360	360	300	12,5	22,5	27	181	142	43190	10140	2400	676
HEM	360	395	308	21	40	27	319	250	84870	19520	4300	1270
HEA	400	390	300	11	19	27	159	125	45070	8560	2310	571
HEB	400	400	300	13,5	24	27	198	155	57680	10820	2880	721
HEM	400	432	307	21	40	27	326	256	104100	19340	4820	1260

Carbon steel. Hot-rolled sections

Wide flange beams, tolerances EN 10034

EN		Dimensions h	b	s	t	r	Cross-sectional area cm^2	Theoretical weight	Section properties Ix	Iy	Wx	Wy
		mm						kg/m	cm^4		cm^3	
HEA	450	440	300	11,5	21	27	178	140	63720	9470	2900	631
HEB	450	450	300	14	26	27	218	171	79890	11720	3550	781
HEM	450	478	307	21	40	27	335	263	131500	19340	5500	1260
HEA	500	490	300	12	23	27	198	155	86970	10370	3550	691
HEB	500	500	300	14,5	28	27	239	187	107200	12620	4290	842
HEM	500	524	306	21	40	27	344	270	161900	19150	6180	1250
HEA	550	540	300	12,5	24	27	212	166	111900	10820	4150	721
HEB	550	550	300	15	29	27	254	199	136700	13080	4970	872
HEM	550	572	306	21	40	27	354	278	198000	19160	6920	1250
HEA	600	590	300	13	25	27	226	178	141200	11270	4790	751
HEB	600	600	300	15,5	30	27	270	212	171000	13530	5700	902
HEM	600	620	305	21	40	27	364	285	237400	18980	7660	1270
HEA	650	640	300	13,5	26	27	242	190	175200	11720	5470	782
HEB	650	650	300	16	31	27	286	225	210600	13980	6480	932
HEM	650	668	305	21	40	27	374	293	281700	18980	8430	1240
HEA	700	690	300	14,5	27	27	260	204	215300	12180	6240	812
HEB	700	700	300	17	32	27	306	241	256900	14440	7340	963
HEM	700	716	304	21	40	27	383	301	329300	18800	9200	1240
HEA	800	790	300	15	28	30	286	224	303400	12640	7680	843
HEB	800	800	300	17,5	33	30	334	262	359100	14900	8980	994
HEM	800	814	303	21	40	30	404	317	442600	18630	10870	1230
HEA	900	890	300	16	30	30	321	252	422100	13550	9480	903
HEB	900	900	300	18,5	35	30	371	291	494100	15820	10980	1050
HEM	900	910	302	21	40	30	424	333	570400	18450	12540	1220
HEA	1000	990	300	16,5	31	30	347	272	553800	14000	11190	934
HEB	1000	1000	300	19	36	30	400	314	644700	16280	12890	1090
HEM	1000	1008	302	21	40	30	444	349	722300	18460	14330	1220

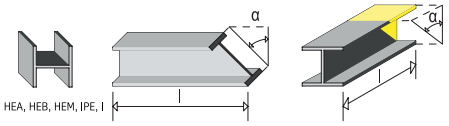


Services

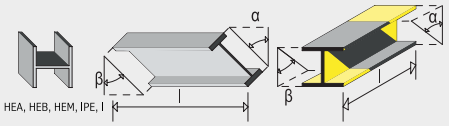
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

I-beam cutting diagrams at an angle

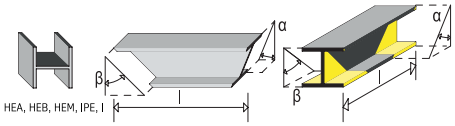
Form A, web horizontal



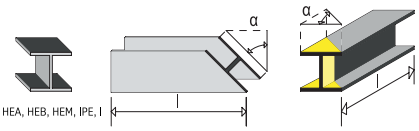
Form B, web horizontal



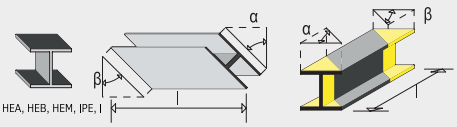
Form C, web horizontal



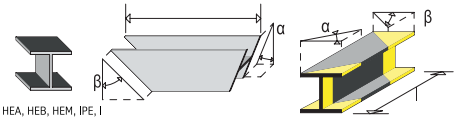
Form D, web vertical



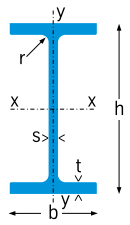
Form E, web vertical



Form F, web vertical



Carbon steel. Hot-rolled sections

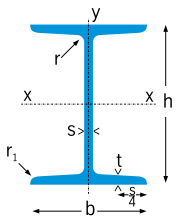


Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

IPE beams, tolerances EN 10034

Marking	Dimensions h	b	s	t	r	Cross-sectional area	Theoretical weight	Section properties Ix	Iy	Wx	Wy
	mm					cm^2	kg/m	cm^4		cm^3	
IPE 80	80	46	3,8	5,2	5	7,64	6,0	80,1	8,49	20,0	3,69
IPE 100	100	55	4,1	5,7	7	10,3	8,1	171	15,9	34,2	5,79
IPE 120	120	64	4,4	6,3	7	13,2	10,4	318	27,7	53,0	8,65
IPE 140	140	73	4,7	6,9	7	16,4	12,9	541	44,9	77,3	12,3
IPE 160	160	82	5,0	7,4	9	20,1	15,8	869	68,3	109	16,7
IPE 180	180	91	5,3	8,0	9	23,9	18,8	1320	101	146	22,2
IPE 200	200	100	5,6	8,5	12	28,5	22,4	1940	142	194	28,5
IPE 220	220	110	5,9	9,2	12	33,4	26,2	2770	205	252	37,3
IPE 240	240	120	6,2	9,8	15	39,1	30,7	3890	284	324	47,3
IPE 270	270	135	6,6	10,2	15	45,9	36,1	5790	420	429	62,2
IPE 300	300	150	7,1	10,7	15	53,8	42,2	8360	604	557	80,5
IPE 330	330	160	7,5	11,5	18	62,5	49,1	11770	788	713	98,5
IPE 360	360	170	8,0	12,7	18	72,7	57,1	16270	1040	904	123,0
IPE 400	400	180	8,6	13,5	21	84,5	66,3	23130	1320	1160	146,0
IPE 450	450	190	9,4	14,6	21	98,8	77,6	33740	1680	1500	176,0
IPE 500	500	200	10,2	16,0	21	116,0	90,7	48200	2140	1930	214,0
IPE 550	550	210	11,1	17,2	24	134,0	106,0	67120	2670	2440	254,0
IPE 600	600	220	12,0	19,0	24	156,0	122,0	92080	3387	3068	307,9
IPE 750	753	265	13,2	17,0	17	188,0	147,0	106100	5289	4411	399,0



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

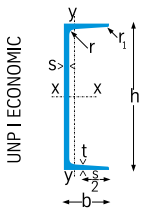
INP standard beams, tolerances EN 10024

Marking	Dimensions h	b	s	t	r	r_1	Cross-sectional area	Theoretical weight	Section properties Ix	Iy	Wx	Wy
	mm						cm^2	kg/m	cm^4		cm^3	
INP 80	80	42	3,9	5,9	3,9	2,3	7,57	5,94	77,8	6,29	19,5	3,00
INP 100	100	50	4,5	6,8	4,5	2,7	10,60	8,34	171,0	12,20	34,2	4,88
INP 120	120	58	5,1	7,7	5,1	3,1	14,20	11,1	328,0	21,50	54,7	7,41
INP 140	140	66	5,7	8,6	5,7	3,4	18,20	14,3	573,0	35,20	81,9	10,70
INP 160	160	74	6,3	9,5	6,3	3,8	22,80	17,9	935,0	54,70	117,0	14,30
INP 180	180	82	6,9	10,4	6,9	4,1	27,90	21,9	1450,0	81,30	161,0	19,80
INP 200	200	90	7,5	11,3	7,5	4,5	33,40	26,2	2140,0	117,0	214,0	26,00
INP 220	220	98	8,1	12,2	8,1	4,9	39,50	31,1	3060,0	162,0	278,0	33,10
INP 240	240	106	8,7	13,1	8,7	5,2	46,10	36,2	4250,0	221,0	354,0	41,70
INP 260	260	113	9,4	14,1	9,4	5,6	53,30	41,9	5740,0	288,0	442,0	51,00
INP 300	300	125	10,8	16,2	10,8	6,5	69,00	54,2	9800,0	451,0	653,0	72,20
INP 340	340	137	12,2	18,3	12,2	7,3	86,70	68,0	15700,0	674,0	923,0	98,40
INP 360	360	143	13,0	19,5	13,0	7,8	97,00	76,1	19610,0	818,0	1090,0	114,00
INP 400	400	155	14,4	21,6	14,4	8,6	118,00	92,4	29210,0	1160,0	1460,0	149,00
INP450	450	170	16,2	24,3	16,2	9,7	147,00	115,0	45850,0	1730,0	2040,0	203,00
INP 500	500	185	18,0	27,0	18,0	10,8	179,00	141,0	68740,0	2480,0	2750,0	268,00
INP 550	550	200	19,0	30,0	19,0	11,9	212,00	166,0	99180,0	3490,0	3610,0	349,00

Carbon steel. Hot-rolled sections

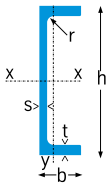
Standard channels UNP, channels with taper flanges C...E, channels with parallel flanges UPE, tolerances EN 10279

Marking	Dimensions						Cross-sectional area	Theoretical weight	Section properties			
	h	b	s	t	r	r_1			Ix	Iy	Wx	Wy
	mm						cm^2	kg/m	cm^4		cm^3	
UNP 30	30	33	5,0	7,0	7,0	3,5	5,44	4,40	3,39	5,33	4,26	2,68
UNP 40	40	20	5,0	5,5	5,5	2,5	3,66	2,96	7,58	1,14	3,79	0,86
UNP 40	40	35	5,0	7,0	7,0	3,5	6,21	5,02	14,1	6,68	7,05	3,08
UNP 50	50	25	5,0	6,0	6,0	3,0	4,92	3,98	16,8	2,49	6,73	1,48
UNP 50	50	38	5,0	7,0	7,0	3,5	7,12	5,59	26,4	9,12	10,6	3,75
UNP 65	65	42	5,5	7,5	7,5	4,0	9,03	7,09	57,5	14,1	17,7	5,07
UNP 80	80	45	6,0	8,0	8,0	4,0	11,0	8,64	106,0	19,4	26,5	6,36
C 80 E	80	40	4,5	7,4	6,5	2,5	9,0	7,1	89,0	12,8	22,4	4,75
UPE 80	80	50	4,0	7,0	10,0		11,3	7,9	107,0	25,4	26,8	7,98
UNP 100	100	50	6,0	8,5	8,5	4,5	13,5	10,6	206,0	29,3	41,2	8,49
C 100 E	100	46	4,5	7,6	7,0	3,0	10,9	8,6	174,0	20,4	34,8	6,46
UPE 100	100	55	4,5	7,5	10,0		12,5	9,82	207,0	38,2	41,4	10,6
UNP 120	120	55	7,0	9,0	9,0	4,5	17,0	13,4	364,0	43,2	60,7	11,1
C 120 E	120	52	4,8	7,8	7,5	3,0	13,3	10,4	304,0	31,2	50,6	8,52
UPE 120	120	60	5,0	8,0	12,0		15,42	12,1	364,0	55,4	60,6	13,8
UNP 140	140	60	7,0	10,0	10,0	5,0	20,4	16,0	605,0	62,7	86,4	14,8
C 140 E	140	58	4,9	8,1	8,0	3,0	15,6	12,3	491,0	45,4	70,2	11,0
UPE 140	140	65	5,0	9,0	12,0		18,42	14,46	599,0	78,7	85,6	18,2
UNP 160	160	65	7,5	10,5	10,5	5,5	24,0	18,8	925,0	85,3	116,0	18,3
C 160 E	160	64	5,0	8,4	8,5	3,5	18,1	14,2	747,0	63,3	93,4	13,8
UPE 160	160	70	5,5	9,5	12,0		21,67	17,01	911,0	107,0	114 ,0	22,6
UNP 180	180	70	8,0	11,0	11,0	5,5	28,0	22,0	1350,0	114,0	150,0	22,4
C 180 E	180	70	5,1	8,7	9,0	3,5	20,7	16,3	1090,0	86,0	121,0	17,0
UPE 180	180	75	5,5	10,5	12,0		25,11	19,71	1353,0	144,0	150,0	28,6
UNP 200	200	75	8,5	11,5	11,5	6,0	32,2	25,3	1910,0	148,0	191,0	27,0
C 200 E	200	76	5,2	9,0	9,5	4,0	23,4	18,4	1520,0	113,0	152,0	20,5
UPE 200	200	80	6,0	11,0	13,0		29,01	22,77	1909,0	187,0	191,0	34,4
UNP 220	220	80	9,0	12,5	12,5	6,5	37,4	29,4	2690,0	197,0	245,0	33,6
UPE 220	220	85	6,5	12,0	13,0		33,87	26,58	2682,0	246,0	244,0	42,5
UNP 240	240	85	9,5	13,0	13,0	6,5	42,3	33,2	3600,0	248,0	300,0	39,6
UPE 240	240	90	7,0	12,5	15,0		38,52	30,23	3599,0	311,0	300,0	50,1
UNP 260	260	90	10,0	14,0	14,0	7,0	48,3	37,9	4820,0	317,0	371,0	47,7
UPE 270	270	95	7,5	13,5	15,0		44,84	35,2	5255,0	401,0	389,0	60,7
UNP 280	280	95	10,0	15,0	15,0	7,5	53,3	41,8	6280,0	399,0	448,0	57,2
UNP 300	300	100	10,0	16,0	16,0	8,0	58,8	46,2	8030,0	495,0	535,0	67,8
UPE 300	300	100	9,5	15,0	15,0		56,6	44,4	7823,0	538,0	522,0	75,6
UNP 320	320	100	14,0	17,5	17,5	8,75	75,8	59,5	10870,0	597,0	679,0	80,6
UPE 330	330	105	11,0	16,0	18,0		67,8	53,2	11008,0	681,0	667,0	89,7
UNP 350	350	100	14,0	16,0	16,0	8,0	77,3	60,6	12840,0	570,0	734,0	75,0
UPE 360	360	110	12,0	17,0	18,0		77,9	61,2	14825,0	844,0	824,0	105,0
UNP 380	380	102	13,5	16,0	16,0	8,0	80,4	63,1	15706,0	615,0	829,0	78,7
UNP 400	400	110	14,0	18,0	18,0	9,0	91,9	71,8	20350,0	846,0	1020,0	102,0
UPE 400	400	115	13,5	18,0	18,0		91,9	72,2	20981,0	1049,0	1049,0	123,0



Services

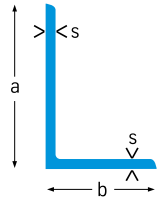
- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

Carbon steel. Hot-rolled merchant bars



Services

- Shot blasting
- Anticorrosive protection
- Grinding

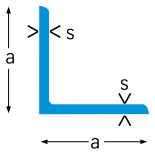
Unequal leg angles, tolerances EN 10056

Dimensions a x b x s	Theoretical weight kg/m	Dimensions a x b x s	Theoretical weight kg/m
30 x 20 x 3	1,11	90 x 60 x 6	6,82
30 x 20 x 4	1,45	90 x 60 x 8	8,96
40 x 20 x 3	1,35	100 x 50 x 6	6,85
40 x 20 x 4	1,77	100 x 50 x 8	8,99
40 x 25 x 4	1,93	100 x 50 x 10	11,1
45 x 30 x 3	1,72	100 x 65 x 7	8,77
45 x 30 x 4	2,25	100 x 65 x 9	11,1
45 x 30 x 5	2,77	100 x 65 x 11	13,4
50 x 30 x 4	2,41	100 x 75 x 7	9,3
50 x 30 x 5	2,96	100 x 75 x 8	10,6
50 x 40 x 4	2,71	100 x 75 x 9	11,8
50 x 40 x 5	3,35	100 x 75 x 11	14,3
60 x 30 x 5	3,37	120 x 80 x 8	12,2
60 x 40 x 5	3,76	120 x 80 x 10	15,0
60 x 40 x 6	4,46	120 x 80 x 12	17,8
60 x 40 x 7	5,14	130 x 65 x 8	11,9
65 x 50 x 5	4,35	130 x 65 x 10	14,6
65 x 50 x 7	5,97	130 x 65 x 12	17,3
65 x 50 x 9	7,52	130 x 90 x 12	19,7
70 x 50 x 6	5,40	150 x 75 x 9	15,3
70 x 50 x 7	6,51	150 x 75 x 10	17,0
75 x 50 x 7	6,51	150 x 75 x 11	18,6
75 x 50 x 8	7,4	150 x 100 x 10	19,0
75 x 50 x 9	8,23	150 x 100 x 12	22,6
75 x 55 x 5	4,95	150 x 100 x 14	26,1
75 x 55 x 7	6,80	160 x 80 x 10	18,2
75 x 55 x 9	8,59	160 x 80 x 12	21,0
80 x 40 x 6	5,41	180 x 90 x 10	20,6
80 x 40 x 8	7,07	180 x 90 x 12	24,5
80 x 60 x 7	7,36	200 x 100 x 10	23,0
80 x 65 x 8	8,66	200 x 100 x 12	27,3
80 x 65 x 10	10,7	200 x 100 x 14	31,6

Carbon steel. Hot-rolled merchant bars

Equal leg angles, tolerances EN 10056

Dimensions a x s mm	Theoretical weight kg/m	Dimensions a x s mm	Theoretical weight kg/m	Dimensions a x s mm	Theoretical weight kg/m
20 x 3	0,88	60 x 8	7,09	110 x 10	16,6
20 x 4	1,13	65 x 5	5,29	120 x 10	18,2
25 x 3	1,12	65 x 6	5,91	120 x 11	19,9
25 x 4	1,45	65 x 8	7,73	120 x 12	21,6
30 x 3	1,36	65 x 9	8,62	130 x 10	19,8
30 x 4	1,78	65 x 7	6,83	130 x 12	23,6
30 x 5	2,18	70 x 6	6,38	140 x 10	21,38
35 x 4	2,1	70 x 7	7,38	150 x 10	23,0
35 x 5	2,57	70 x 9	9,34	150 x 12	27,3
40 x 4	2,42	75 x 5	5,76	150 x 14	31,6
40 x 5	2,97	75 x 6	6,85	150 x 15	33,8
40 x 6	3,52	75 x 7	7,94	160 x 15	36,2
45 x 4	2,74	75 x 8	9,03	160 x 16	38,4
45 x 4,5	3,06	80 x 6	7,34	180 x 15	40,9
45 x 5	3,38	80 x 8	9,66	180 x 16	43,5
50 x 4	3,06	80 x 10	11,9	180 x 18	48,6
50 x 5	3,77	90 x 6	8,28	200 x 16	48,5
50 x 6	4,47	90 x 7	9,61	200 x 18	54,3
50 x 7	5,15	90 x 8	10,9	200 x 20	59,9
50 x 8	5,81	90 x 9	12,2	200 x 24	71,1
55 x 6	4,94	90 x 10	13,4	250 x 24	90,0
60 x 4	4,76	100 x 8	12,2	250 x 22	82,8
60 x 5	4,57	100 x 10	15,1	250 x 26	97,0
60 x 6	5,42	100 x 12	17,8	300 x 34	150

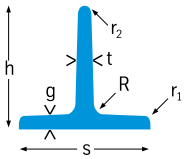


Services

- Shot blasting
- Anticorrosive protection
- Grinding

T-bars, tolerances EN 10055

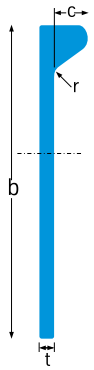
Dimensions h x b mm	Theoretical weight kg/m
30 x 4	1,77
35 x 4,5	2,33
40 x 5	2,96
50 x 6	4,44
60 x 7	6,23
70 x 8	8,32
80 x 9	10,7
90 x 10	13,40
100 x 11	16,4
120 x 13	23,2
140 x 15	31,3



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection
- Grinding

Carbon steel. Hot-rolled merchant bars



Services

- Saw cutting
- Shot blasting
- Anticorrosive protection

Bulb flats

We have a range of bulb flat bars for shipbuilding industry. They are the most cost effective and corrosion resistant solution for stiffening sheet metal. They are lighter than flat bars or angle bars and provide greater strength to buckling.

Cert. 3.2 of recognition from global acceptance societies: LRS, DNV-GL, BV, ABS, RINA

Width: 60 mm - 430 mm
Thickness: 4 mm - 20 mm
Length: 6 mm - 12 mm
Grade: A, D, A36, D36

Drawn bars according to EN10277/10278

Serwis

- Saw cutting
- Shot blasting
- Anticorrosive protection

In our stock offer we have drawn bars:
- round

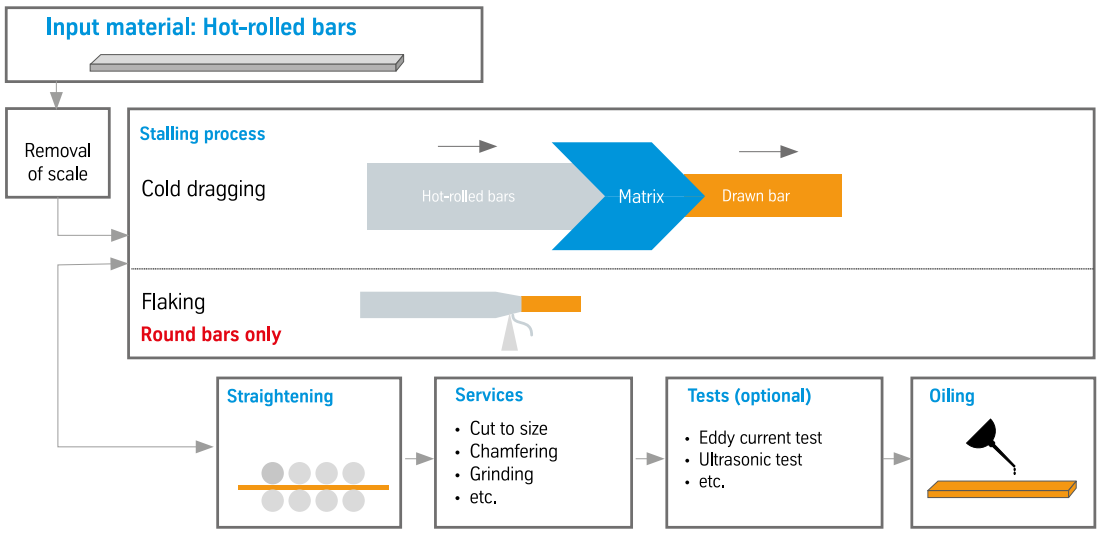
Available in grades:
1. S235JRC+C
2. S355J2C+C
3. C45+C/SH
4. 11SMn30+C
5. 11SMNPb30+C

On individual customer request we also offer drawn rods:
- squares
- flat
- hexagonal
- and round bars peeled and ground.

Drawn steel is recommended primarily where precision and accuracy of surface finish are critical, such as in machine building, the furniture industry, the electronics industry and the manufacture of optical equipment.

The main advantages of drawn bars are:
- high straightness,
- narrow dimensional tolerances,
- very smooth surfaces, free from pores, defects and corrosione.

Production scheme for drawn bars



Carbon steel. Hot-rolled merchant bars

Round bars, tolerances EN 10060, square bars, tolerances N 10059

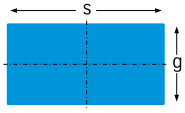
Dimensions mm	●	■
	Theoretical weight kg/m	
6	0,222	0,283
7	0,302	0,385
8	0,395	0,502
9	0,499	0,636
10	0,616	0,785
11	0,746	0,950
12	0,890	1,13
13	1,04	1,33
14	1,21	1,54
15	1,39	1,77
16	1,58	2,01
17	1,78	2,27
18	2,00	2,54
19	2,23	2,83
20	2,47	3,14
21	2,72	3,46
22	2,98	3,80
23	3,26	4,15
24	3,55	4,52
25	3,85	4,91
26	4,17	5,31
27	4,49	5,72
28	4,83	6,15
29	5,19	6,60
30	5,55	7,07
31	5,93	7,54
32	6,31	8,04
33	6,71	8,55
34	7,13	9,07
35	7,55	9,62
36	7,99	10,2
38	8,90	11,3
40	9,86	12,6
41	10,4	13,2
42	10,9	13,8
43	11,4	14,5
45	12,5	15,9
46	13,0	16,6
48	14,2	18,1
50	15,4	19,6
52	16,7	21,2
53	17,3	22,1
55	18,6	23,8
57	20,0	25,5

Dimensions mm	●	■
	Theoretical weight kg/m	
60	22,2	28,3
62	23,7	30,2
63	24,5	31,2
65	26,0	33,2
68	28,5	36,3
70	30,2	38,5
75	34,7	44,2
80	39,5	50,2
85	44,5	56,7
90	49,9	63,6
95	55,6	70,9
100	61,7	78,5
105	68,0	86,5
110	74,6	95,0
115	81,5	104
120	88,8	113
125	96,3	
130	104	
135	112	
140	121	
145	130	
150	139	
155	148	
160	158	
165	168	
170	178	
175	189	
180	200	
190	223	
200	247	
225	312	
250	385	
210	272	
220	298	
225	312	
230	326	
240	355	
250	385	
260	416	
270	449	
280	483	
290	518	
300	554	
320	631	

Services

- Saw cutting
- Shot blasting
- Anticorrosive protection

Carbon steel. Hot-rolled merchant bars



Services

- Shot blasting
- Anticorrosive protection

Flat bars, tolerances EN 10058 and DIN 59200

Width s mm	Thickness g in mm														
	3	4	5	6	8	10	12	14	15	16	20	25	30	40	50
	Theoretical weight kg/m														
20	0,47	0,63	0,79	0,94	1,26	1,57	1,88	2,20	2,36	-	-	-	-	-	-
25	0,59	0,79	0,98	1,18	1,57	1,96	2,36	2,75	2,94	-	-	-	-	-	-
30	0,71	0,94	1,18	1,41	1,88	2,36	2,83	3,30	3,53	3,77	4,71	-	-	-	-
35	-	1,10	1,37	1,65	2,20	2,75	3,30	3,85	4,12	4,40	5,50	-	-	-	-
40	0,94	1,26	1,57	1,88	2,51	3,14	3,77	4,40	4,71	5,02	6,28	7,85	9,42	-	-
45	-	1,41	1,77	2,12	2,83	3,53	4,24	4,95	5,30	5,65	7,07	8,83	10,60	-	-
50	-	1,57	1,96	2,36	3,14	3,93	4,71	5,50	5,89	6,28	7,85	9,81	11,78	15,70	-
60	-	1,88	2,36	2,83	3,77	4,71	5,65	6,59	7,07	7,54	9,42	11,78	14,13	18,84	23,55
70	-	-	2,75	3,30	4,40	5,50	6,59	7,69	8,24	8,79	10,99	13,74	16,49	20,41	25,51
80	-	-	3,14	3,77	5,02	6,28	7,54	8,79	9,42	10,05	12,56	15,70	18,84	25,12	31,40
90	-	-	3,53	4,24	5,65	7,07	8,48	9,89	10,60	11,30	14,13	17,66	21,20	28,26	35,33
100	-	-	3,93	4,71	6,28	7,85	9,42	10,99	11,78	12,56	15,70	19,63	23,55	31,40	39,25
110	-	-	4,32	5,18	6,91	8,64	10,36	12,09	12,95	13,82	17,27	21,59	25,91	34,54	43,18
120	-	-	4,71	5,65	7,54	9,42	11,30	13,19	14,13	15,07	18,84	23,55	28,26	37,68	47,10
130	-	-	5,10	6,12	8,16	10,21	12,25	14,29	15,31	16,33	20,41	25,51	30,62	40,82	51,03
140	-	-	5,50	6,59	8,79	10,99	13,19	15,39	16,49	17,58	21,98	27,48	32,97	43,96	54,95
150	-	-	5,89	7,07	9,42	11,78	14,13	16,49	17,66	18,84	23,55	29,44	35,33	47,10	58,87
160	-	-	6,28	7,54	10,05	12,56	15,07	17,58	18,84	20,10	25,12	31,40	37,68	50,24	62,80
180	-	-	7,07	8,48	11,30	14,13	16,96	19,78	22,00	22,61	28,26	35,33	42,39	56,52	70,65
200	-	-	7,95	9,42	15,56	14,70	18,84	21,98	23,55	25,12	31,40	39,25	47,10	62,80	78,50
220	-	-	-	10,36	13,82	17,27	20,72	24,18	25,91	27,63	34,64	43,18	51,81	69,08	86,35
250	-	-	-	11,78	15,70	19,63	23,55	27,48	29,44	31,60	39,25	49,07	58,88	78,50	98,13
300	-	-	-	14,13	18,84	23,55	28,26	32,97	35,33	37,68	47,10	58,88	70,65	94,20	117,75

Engineering and quality steel. Bars and sheets

We supply hot rolled bars in raw, annealed, normalized or quenched and tempered condition, as well as cold drawn bars, polished bars and sheets made of the following steel grades:

- for hardening (quenched and tempered),
- for nitriding,
- for carburizing,
- for bearings,
- for springs,
- for tools,
- for highly loaded components, such as spindles, axles, crankshafts, non-hardened hears, electric motor shafts, regular scissors, wheel hubs, discs, rods, cylinders, rollers, pump rotors (C45),
- for parts exposed to variable loads, such as e.g. axles, crankshafts, gears, levers, con rods, housing and grabbing components of tooling, fasteners, abrasion discs, levers (41Cr4, 42CrMo4),
- for highly loaded machine parts having small dimensions, such as gears, screws, sleeves, pins, cam belts (20MnCr5/16MnCr5).

Services

- Cutting
- Hole-cutting
- Lipping

PN	EN	IN NO.
15	C15	1.0401
	C15E	1.1141
35	C35	1.0501
	C35E	1.1181
45	C45 (+C)	1.0503
	C45E	1.1191
55	C55	1.0535
	C55E	1.1203
60	C60	1.0601
	C60E	1.1221
40H	41Cr4	1.7035
40HM	42CrMo4	1.7225
34HNM	34CrNiMo4	1.6582
16HG	16MnCr5	1.7131
20HG	20MnCr5	1.7147
-	27MnCrB5-2	1.7182
18HGT	-	-
50HS	-	-
50HF	51CrV4	1.8159
-	11SMn30 (+C)	1.0715

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Grudziądzka159
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jakosciowe@tkmaterials.pl

Welding consumables

Covered electrodes for manual welding of

- unalloyed steel and fine-grain steel
- high-strength steel
- high-alloy and heat resistant steel
- cast iron
- stainless steel and non-ferrous metals
- hardfacing and regeneration

Solid and flux cored wires for MIG/MAG welding

- unalloyed steel and fine-grain steel
- high-strength steel
- high-alloy and heat resistant steel
- cast iron
- stainless steel and non-ferrous metals
- hardfacing and regeneration

Soldering materials for

- unalloyed steel and fine-grain steel
- tool steel and sintered carbides
- high-alloy steel
- stainless steel and non-ferrous metals

Welding torches and spare parts for torches

- MIG/MAG welding torches
- TIG welding torches
- Plasma cutting torches
- control sockets
- parts and accessories for MIG/MAG and TIG torches and for plasma

Fittings and accessories

- electrical welding
- gas welding and cutting
- heating and soldering
- gas regulators
- gas accessories
- measuring instruments
- EHS

Industrial chemicals

- anti-spatter sprays and pastes
- anti-corrosion chemicals
- cleaning preparations

Welding Consumables Department
05-870 Błonie
Kolejowa 44
T: +48 22 594 08 35 / 43
spawalnictwo@tkmaterials.pl

Offering for the construction industry

Construction reinforcement

Modern equipment of our reinforcement workshops enables us to fabricate cut or bent items, or stirrups of any shape. We deliver to custom designs and orders, prepared on the basis of technical drawings supplied to us. We ensure professional delivery and short turnaround times to the project location.

Opportunities and benefits:

- fabrication of reinforcement components of any size as per the effective standards,
- bar diameter range from 6 to 32 mm in AIIIN steel grade,
- single point of contact for the customer,
- centralized production management and logistics oversight,
- timely contract delivery.

Technologies:

- fast order processing owing to Poland's most modern technologies, such as e.g. Mega Genius and Bar Wiser,
- automated technical process supported by dedicated Lennerts & Partner software,
- POLYBAR 40-V bar bending machine,
- bending machine for reinforcement stirrups - POLYBEND PBC2-16A,
- DBS 40 double-bending machine with conveyor.
- EPD certificate in accordance with EN 15804+A1: 2014-04

Construction Reinforcement Department
87-100 Toruń
Grudziądzka 159
tel. +48 56 611 96 65
dzb@tkmaterials.pl

Steel structures

Our offering includes:
- acoustic panels pillars,
- steel structures for industrial construction,
- lightweight and heavy steel construction,
- steel frames,
- steel gates and doors for road construction,
- overhead crane beams,
- stainless steel structures,
- structures as per the customer's documentation,
- steel plate girders.

Anticorrosion protection as required by customer:
- hot-dip galvanizing acc. PN EN ISO 1461,
- electro-galvanizing,
- spray-metal painting,
- spray painting acc. PN EN ISO 12944,
- powder coating acc. PN EN 13438

Certificates:
- PN EN 1090-2 EXC33,
- PN EN ISO 3834-2,
- PN EN 15085-2:2007

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engineering.tomorrow.together.

MANAGEMENT SYSTEM CERTIFICATION
DNV
ISO 9001 · ISO 45001
07/2022 (A.D-T)